THE OLD TIMER'S BULLETIN

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Published for the Old Time Wireless Operator, Historian and Collector

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"Yesteryears - - - -"

(See page 17)

Devoted to research and documentation of the history of wireless communications.

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HOLCOMB, NEW YORK 14469

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"The Old Timers Bulletin"

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Managing Editor:
BRUCE KELLEY, W2ICE
Printer: Don Ray, WA2PKS
Photographer: Dick Ransley, WA2TLR

Contributing Editors:
Broadcast Receivers: Bob Allen
Association News: Cicely Blossom Smith
Television: Jack Davis
Telecommunication:
Don deNeuf, WA1SPM
Vacuum Tubes: Bro. Pat Dowd, W2GK
Communication Receivers:
Wm. Fizette, K3ZJW
Amateur Activities:
Ken Gardner, W2BGN Bud Hall, K2LP
Key & Telegraph: Lou Moreau, W3WRE
The Loudspeaker: Floyd Paul, W6THU
Junior Wireless: Glen Fuller, N2EXL

Membership records: Arlene Roloson

Circulation: Dick Fish, W2OWF
W2GB, KA2DZC, W2PHT, W2SNI, W2VVG, WA2UGE, K2WW, W2ZHB, WB2ZJY

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Joyce Peckham
Box "E"
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WHO TO WRITE TO: (Write legibly. Enclose S.A.S.E. for prompt reply.)

Lauren Peckham *(President),* Ormiston Rd., Breesport, NY 14816 – Tel. 607-739-5443
All official business, Conference and meeting activities.

Richard Ransley *(Secretary),* 17 Sheridan Street, Auburn, NY 13021
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Financial reports, back issues of Bulletin.

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Old Timers Bulletin material, Museum artifacts.

IN THIS ISSUE
— SPECIAL FEATURES —

Page	Feature
4.	Association News
6.	1987 Conference Auction Results
8.	National's DANCING SAM
10.	SUPERHETS to SEWAGE by Alan Douglas
11.	RCA RECEIVER Dates
12.	The National AGS-58C Receiver by Wm. Fizette, K3ZJW
14.	The Stock Market in 1924
15.	A CHEAP MIDGET by Dan Boucucault
15.	The New Pavek Museum
16.	The KADETTE Receiver by Lauren Peckham
18.	EL CRISTO by Don deNeuf
19.	Weagant's Static Receiver
20.	Sterling's RADIO MANUAL by Jim Kreuzer, N2GHD
21.	Early CAMELBACK Keys by Lou Moreau, W3WRE
22.	TELEVISION TOPICS by Jack Davis
24.	SPEAKERS not made by RCA Floyd Paul, W6THU
26.	Want Ads
30.	VACUUM TUBE MUSEUM Panels by Bro. Patrick Dowd, W2GK
33.	Collecting Radio Magazines
34.	FRANK JONES- Editor & Writer by Floyd Paul
39.	Book Reviews
40.	REFORMING CAPACITORS by D. Danielson
41.	Old Time "Modern Electrics" ads
43.	The Lead Acid Battery
44.	Museum News

AWA MUSEUM ACQUIRES RARE "EXPANSE" VALVE

The Museum has received an extremely rare Expanse valve, the first tube manufactured in Australia, a gift from vacuum tube authority Fin Stewart of Avoca Beach, N.S.W., Australia.

It may be the only Expanse valve in North America, although there may be one or two of a later version, the Expanse "B", among American collectors. See page 273 of Tyne's *Saga*.

COMING EVENTS
ANTIQUE WIRELESS ASSOCIATION

JAN. 13,14,16,17 OT CW Contest
APR. 22-23 IHRS- AWA Meet Ft. Wayne, Ind.
APR. 30 AWA New Jersey Meet Tranquility, N.J.
May 7 Local AWA Meet, Holcomb, NY
MAY 20-22 Rochester Hamfest
MAY 21 SCARS- AWA Meet Burbank, Calif.
SEPT. 21-25 1988 Conference
OCT. 19-22 1929 QSO Party
NOV. 6 Annual Business Meeting, Canandaugua, NY
Other meetings to be announced. Contact Lauren Peckham for regional-joint meetings.

IMPORTANT NOTICE !

Effective immediately all

DUES and ADDRESS CHANGES

must be sent to the following address:

ANTIQUE WIRELESS ASSN.
BOX "E"

BREESPORT, NY 14816

(Do NOT use the former Penn Yan address.)

SILENT KEYS

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Jack Allison
Frederic Stafford

AWA NETS (EST/ESDT)

PHONE (SSB)

Sunday: 7247 kc. at 12 noon
3867 kc. at 5 PM

Tuesday: 14274 kc. at 2:30 PM
3837 kc. at 8 PM

Mon.-Wed.-Fri.: 3867 at 9:30 AM

CW-- 3584 kc. 4 PM daily

First Wednesday each month at 8 PM

ASSOCIATION NEWS

Report by Cicely Blossom-Smith

BRIEF REVIEW OF AWA MEETS:

RHODE ISLAND meet was held on one of those very hot days we had in July. In spite of the heat, there was good attendance with great interest in both Bob Merriam's fine Wireless Museum and the unique Steam Engine display. Thanks to John Drake and Ralph Williams for the handling the AWA Program.

ILLINOIS "*Radiofest*" (ARCI) brought members from all over the mid-west. Excellent programming, large flea market, all under the guidance of Joe Willis and crew. Dex Deeley from AWA Headquarters reports there were some nice pieces of gear available.

GEORGIA was the scene of the 1987 ARRL National Convention. See report elsewhere in the *OTB*.

TEXAS has Chevie Crandell and Mike Sherman and their staff for another successful VRPS Convention held recently in Dallas. The affair was highlighted with a large auction and a most impressive equipment contest with numerous awards. Of interest, the group has interest in early phonographs as well as radios.

NEW YORK again found the annual gathering of NFWA and AWA members at the Elma Conservation Clubhouse. The Kreuzers planned a good time for those attending with a program, contest and dinner and, of course, there was an interesting flea market. As in the past, a few Canadian members were present.

IHRS – AWA MEET

The report on this fine Indiana meet (at the Auburn Museum) was delayed because of my poor filing system. The event started Friday PM with a large group viewing the seldom seen AWA show *Portrait of a Pioneer*. Saturday was a day full of activities including a large auction, contests and an overflowing outdoor flea market. The evening banquet featured the president of the Jack Benny Club as speaker and Ross Smith was awarded the Grebe Trophy for his excellent restoration of a 1921 Reinartz receiver. Pre-meet registration was 175 and total attendance approached 200.

CORRESPONDENCE ---

Do not write to OTB editors/writers at the Holcomb address, for they will not be forwarded. The absence of the author's address in the Bulletin indicates that for personal reasons he does not wish to correspond. *OTB* circulation is approaching 4000, making it difficult for our writers to reply to numerous queries.

This list includes: Pat Dowd, Ludwell Sibley, Lou Moreau, Dan Boucicault, Don deNeuf, D. Kenneth Eneph, Bob Allen, Alan Douglas, Carl Ziegler and until recently, J. K. Bach.

NEW MEMBERS WHO ARE RADIO AMATEURS:

AWA has many members who are interested in early amateur radio equipment and operation. To encourage this interest, the Association sponsors two annual events in which members participate:

The 1929 QSO Party (Sept. or Oct.)

This event is restricted to transmitters of 1929 design or earlier (usually a self-excited oscillator) with an input less than 10 watts on 80 meters. Although not mandatory, many participants use 1929 two or three tube regenerative receivers.

The Lincoln A. Cundall Memorial Contest (January)

is the big event using vintage equipment. This parallels the interest of broadcast collectors who build or restore early broadcast receivers. Here, the radio amateur builds or restores early amateur equipment of pre-WW2 design and contacts fellow members. Scoring depends on type of equipment used. See back issues of the Bulletin for general information. It is believed to be the only contest of its kind.

On the subject of OT stations, George Andrews, W5PV, writes that a source for good 40 and 80 meter crystals for only $2.95 + 50¢ postage is:

C-W Crystals, 570 N. Buffalo St.
Marshfield, MO 65706

AWA BID-AUCTION ON RARE TUBES

The Association will offer a collection of rare vacuum tubes to the highest bidder with proceeds to the AWA Museum Maintenance Fund. Following general museum practice, the tubes will be de-accessioned, are duplicates and are available only to the highest bidder. The tubes will be guaranteed as described with shipment covered by insurance.

The tubes will be broken into 8 groups and will include DeForest spherical audions, tubular audions, Arcturus blues, VT-1s, Cardon and Kellogg tubes, Welsh and Electrad diodes, electron Relays, Marconi VTs and a rare British Round Type "N" valve. Wherever possible, reference will be made to either Tyne's "*Saga*" or Stokes' "*70 Years*".

For listing, write: Dex Deeley
8 Briar Circle, Rochester, NY 14618

COLLECTING HEADPHONES?

A recent article in the New Zealand Club's paper (Edited by John Stokes) tells of a member who has collected 52 different makes of American earphones plus numerous others manufactured in Great Britain and elsewhere. Are there any American collectors? If so, write and tell me about your collection. *--Editor*

COMING UP ---

a complete listing of 428 different brands of the 201-A family. The 428 different labels (names) will be printed in the next issue of the *OTB* as a result of Bro. Pat's extensive survey. He wishes to thank the many members who contributed to the listing.

MATERIAL FOR OTB

Members submitting copy for the OTB are asked to follow these rules:

1. For lengthy articles, write Editor with description, number of words, pictures, etc. **BEFORE** submitting.
2. Double space all typing. Try to keep length of lines less than 5½".
3. Schematics and diagrams **MUST** be in final form and ink drawn to either approximate 3¼" or 6½" width.
4. Pictures must be sharp, and preferably black & white. (Use of color only on rare occasions). No negatives. Small photographs (3x4 or 5x7) are OK.

VACATIONING IN NEW JERSEY?

Plan to visit Thomas Edison's National Historical Site at Main Street and Lakeside Avenue, West Orange, New Jersey (not far from Exit 10, Rte.280). The complex includes four laboratories, various workshops, the Black Maria movie studio and museum. The facilities are open 7 days a week, 9 AM to 5 PM. For additional information, telephone (201) 736-1515.

CHANGING TIMES --

Charles Brelsford, K2WW, former AWA President and Museum Administrator, has moved to Tempe, Arizona. His presence will be greatly missed at Headquarters and AWA functions. He assures us he will continue his interest in club activities and attend AWA meetings whenever possible.

BACK ISSUES

The following OLD TIMERS BULLETINS remain in stock. Make check out to A. W. A. and mail to:

Dexter Deeley
8 Briar Circle
Rochester, N. Y. 14618

Vol. #	Vol. #	Vol. #	Vol. #
14-4	22-3	25-3	28-1
17-1	22-4	25-4	28-2
18-3	23-1	26-1	28-3
19-4	23-2	26-2	
20-2	23-3	26-3	
20-3	23-4	26-4	
21-1	24-1	27-1	
21-2	24-3	27-2	
22-1	24-4	27-3	
22-2	25-1	27-4	

$2.50 each postpaid

19-3 20-1 20-4
(Issues with Monograph)
$4.00 each postpaid

Vol. 1-2 and 1-3 (Reprints for reference) $.50 each ppd.

THE AUCTION

NATIONAL HISTORICAL RADIO CONFERENCE

SUMMARY OF CONFERENCE AUCTION

(f) Fair, (g) Good, (vg) Very Good, (e) Excellent. All sets have tubes unless otherwise noted. (n/t)

RECEIVERS:

Eveready Mod.2 (g)$35., Crosley 51 (g) $35., same (e) $115., Crosley Super Tri. $40., Dick Tracy wrist set (g) $55., Federal 61 (e)$380., (2) AK-20's (small & large box) (vg)$85., AK breadboard (f) $380). AK-80 cathedral (e)$265., AK-36/spk (g)$125., AK-35 (f)$36., Neutrowound Super-6 (e)$175., NR-215 (e)$230, Philco radio/phono (g)$25., Philco cathedral 84 (g)$65., Philco 20 (g)$80., Philco 71 Cathedral (vg)$160., Philco 50703 (e)$90., Stewart-Warner 301A (e)$40., Aeriola Sr. /WD11 (vg)$80., Rogers R-32 (g)$20., Radiola 21 (e)$100., Radiola 20 (f)$35., Radiola III (f)(tubes ng)$75., III w/o tubes (g) $50., Radiola VIII (vg)$75., Radiola 33 (g)$10., Radiola 18 (vg)$35., Radioa III w/t (g)$60., Hallicrafter 7" TV (f)$50., Capehart T-522 (e)$30., Rogers 220 (g)$225., Pilot 3"TV (f)$120., HRO-5 w/coil (g)$105., Admiral 7"TV $35., RCA 60 (f)$31., Browning-Drake (vg)$150., Zenith chairside (e)$50., Colonial using (5) 199's (g)$60., Scott All-Wave 12 $85., Kennedy 220 (vg) $310., AK-30 $40., Sparton AC-62 w/Cardon tubes (f)$50., "Mae West" BD-197 (g)$300., Zenith Trans-Oceanic (g)$31., Aeriola Sr. (g)$120., Magnavox TRF-J (g)$60., DeForest D-12 (g)$100., DeForest F-5 (g)$85., Ware with spkr (vg) $125., Sparton"500" (e)$500., Fada neut. $32., Stromberg-Carlson 320 (vg) $20., SW-3 w/pwr (e) $90., Bremer-Tully (f) $35., Infradyne (g) $75., Silvertone 1808-A (g)$40., Ultradyne L-2 (g) $65., Grebe Synchrophase (vg) $155., Homebuilt 1-tuber (e) $19., Fada R-80 (g) $25., Frehsman Masterpiece w/horn (g) $85., 1924 Arborphone (g) $60., Sky Buddy (e) $25., W.E. 7-A amp w/t (e) $150., Radiola 16 (vg)$70.

CRYSTAL SETS:

Quaker Oat set (e) $70., Homemade $30., Homemade (g) $20., Air-Champ (f) $15., Little Gem (g) $280., Louisville Elec.Co. set (vg) $150., Philmore "Selective" (g) $100.

SPEAKERS:

Utah (f) $22., Magnavox R3 (g) $60., (2) Magnax R3's (f)$55., Radiola 100 (g) $18., Whirt cone spkr. (f) $9., Music Master horn spkr. $65., Saal horn spkr. (f) $50., RCA 106 $52, W.E. 10 $55. Edison phono horn (vg) $70.

METERS & TEST EQUIPMENT:

Supreme tube tester (e) $25., Supreme Tube tester (f) $5., Hoyt tube tester (f) $15., Hewlitt-Packard VHF #417A $25., Early Weston meter relay (vg)$60., Mercury galvanometer (g)$340., Electrostatic voltmeter (g)$31., G.R. 544-B megohm-bridge (e) $28., GR wavemeter (g) $45.

TELEGRAPH:

Foreign telegraph key on slate base (g) $40., W.S.A. key w/ant switch (g) $150., Code Instructograph (g) $14., Practice key (e) $10., Early Vibroplex (g) $31., Telegraph set TG-5B (vg) $35.,

SOFTWARE:

(10) Science & Invention mags. (g) $31., Riders No.1 (g) $40., (4) "Radio Girl" books (g)$45., (2) "Radio Boy" books $9., Books: Taggart: "Thermoinic Tubes" and Fleming "Thermionic Valves (g)$130. 1923-1928 RCA Service manuals $28., MESCO (1919) catalog $35., Marconi 1921 "Yearbook" $26., 1927 Gover. amateur callbook $19., Autobiography signed by DeForest $75.

MISCELLANEOUS:

WW2 "Handy-Talkie" (f) $30., "Master Violt" machine (g) $15., RCA record cutting machine (e) $25., Webcor wire recorder (g)$21., BC-129 transmitter (g) $410., DeForest honeycomb coil mount w/coils $23., BC-9A Xmtr-Rcvr (g)$200., Induction coil in box (e) $25., Electro-Voice V-2 mike (g) $40., Aiwa M-18 mike (g) $35., Zenith sign $36., W.E. telephone ringer (g) $20., Astatic D-104 mike (g) $20., (2) Murdock var. condensers $23.

COMMENTS: There weren't too many surprises. TV sets after 1949 had little response while values for crystal sets are climbing. There appeared to be more software (books, catalogs and magazines) than previous years. This is only a partial listing. Many items were "mixed" making it difficult for an accurate report.

RESULTS OF AWA CONFERENCE VACUUM TUBE AUCTION

RECEIVING TUBES:

(Note -n/b indicates "New" in "box".)

(2) WD-11's $50.,(2) WD-11's $61, DL-3 new in can $55.,Kellogg 401 $20, New $31., (5) 201A's $32, (5) 201A's $27., (4) DV -2's $75., Musselman 5VC $100,. WD-12 (brass) $15., Loewe NF-3 (poor) $180.,WR-21 Aeriotron $65., DL-3 new in can $75., Marconi V-24 n/b $75., MU-6 & MU-20 n/b $110., (6) different Arcturus "blues" $45., (21) 201-A's $70. (3) Type 45 tubes $20., (2) Wunderlichs $75., (3) brass UV-201A's $59.,Brass UV-201 $20.

EARLY TUBES:

Myers (open fila.) $19.,Myer $31.,Myer w/socket $50.,DeForest CF-185 w/socket $340., DeForest spherical audion $550., Same with socket $400., Tubular Moorhead $40.,AudioTron (open fil.) $50., Tubular AudioTron w/label & good fila. $95., Welsh diode $230., Welsh n/b $310.

COMMERCIAL TUBES:

UV-203A $17., UV-204 $69,,UV-204A $22. (2) Duovac VT-2's $30., WE 216A $22., WE 242-A $5., (2) WE 239-A $18., UV-852 $29., VT-14 (CG-1162) $26., WE 216-A $20., (2) 205D's n/b $40., UV-202 n/b $26., VT-1 n/b (21.,New Marconi 1921 100w. transmit tube $120.

RECTIFIER-BALLAST TUBES:

(2) UV-217's $20., UV-886 ballast $10., (2) UX-213's n/b $35., BA rect. n/b $12

MISCELLANEOUS:

Geisler tube $150., (3) traveling-wave tubes $21., Raytheon Kino-lamp $125.

COMMENTS: Spherical Audions still dominate the high price range with the Welsh diode creeping up as a rare contender. Overall, it was an excellent auction offering the tube collector many seldom seen tubes.

RESULTS OF AMATEUR RECEIVER AUCTION

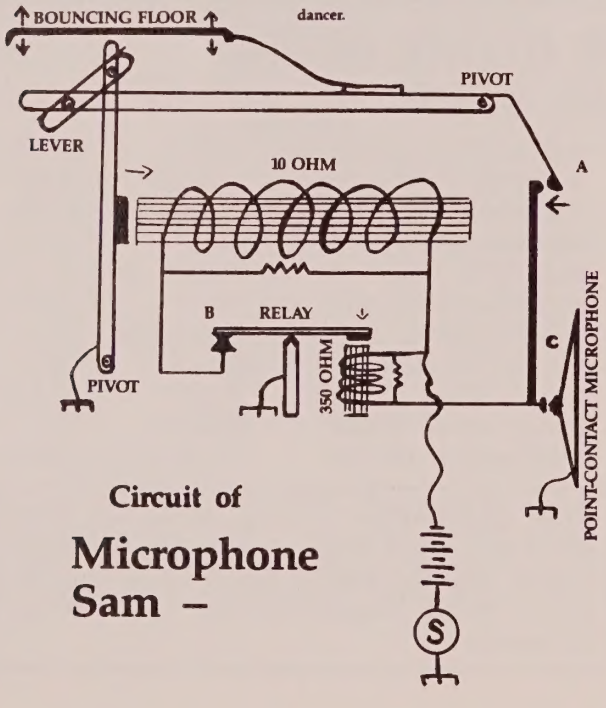
by Ed Gable, K2MP

Echophone EC-1	Good	$20.
Sonar exciter	Works	$3.
Elmac A54H	Works	$23.
Hallicrafter SX62	Like new	$105.
Hallicrafter SX18	Excellent	$100.
Hallicrafter SX25	Fair	$26.
Hallicrafter SX99	Good	$42.
Hallicrafter S40A	Very good	$40.
Hallicrafter S38	Good	$21.
Hallicrafter Sky Challenger	New?	$245.
Hallicrafter S38D	Fair	$16.
Hallicrafter SX28	Good	$50.
Sait (British)	Fair	$41.
Hammarlund HQ-129X	Excellent	$45.
National HRO50AT1	Excellent	$180.
National SW54	Good	$21.
National 300	Poor	$17.
National 105	Fair	$20.
National 303	Poor	$22.
National HFS w/ps	Good	$35.
Hammarlund HQ-180A	Excellent	$100.
Meisner SS (postwar)	Good	$16.
RME VHF-152	Good	$15.
Hallicrafter 5-10	Fair	$40.
Harvey-Wells bandmaster	Good	$51.
Gcnset Comm. II	Good	$10.
Clegg 99er	Fair	$12.
Elmac AF67 w/ps	Poor	$21.
Layfayette HE-52	Poor	$1.

This is a partial listing. Results were not too surprising. Again the collector found several good "buys" and the restorer some "clunkers" for restoration purposes.

NATIONAL RADIO COMPANY'S TOY: DANCING SAM

Old time movie actor Adolph Menjou entertains a friend with Dancing Sam...



Circuit of Microphone Sam –

1. Turning on switch S energises 10 ohms solenoid through contact B causing bouncing floor to rise.

2. This closes contact A which activates relay and opens contact B.

3. This cuts off current to bouncing floor which falls back to starting position with contact A open and B closed.

With switch on, events 1, 2 + 3 continuously repeat causing bouncing floor to vibrate at a frequency of about 300 cycles per minute.

4. Peaks or beats of programme material (music) picked up by point contact microphone closes contact C in time with peaks. This activates relay and opens contact B also in time to the beat. Thus the normal bouncing of the floor is interrupted rhythmically.

Story on next page ⟶

Microphone Sam –

An article in a recent issue of the *British Vintage Wireless Society's Bulletin* caught my attention: it tells of a toy made by the National Radio Manufacturing Company in the early 30's. The author, David Read, found one of these rare objects in London, and after much research and restoration, came up with a working model. He exhibited it at the '87 Herpenden Meet, where it aroused much attention. Now here is my story.

Two years ago when I visited James Millen (now deceased) he offered me one of these toys. He was former General Manager and Chief Engineer of the National Company and played a part in the toy's development. He was going to throw it away since he didn't regard the toy very highly. After all, he was the designer of the HRO and other high quality radio products!

He said, "*Bruce, if you want it, be sure and take Sam (a wooden loosely jointed doll) and especially the microphone (this latter appeared to be a very inexpensive object.) You will need it.*"

I placed the metal box, doll and microphone in a cardboard box, brought them back to Holcomb and placed them on a shelf, where they were forgotten until I read David's article.

Briefly, "*Dancing Sam*" was a toy marketed in 1932. Sam was suspended by a spring with his feet dangling on a speaker diaphragm. By speaking or making a sound such as music in the microphone, the speaker diaphragm (bouncing floor) would vibrate which in turn made Sam dance.

According to Read, the key to the toy's operation is the microphone which Jim gave me – and which I was going to discard! The microphone reacts only two ways: either there was no continuity (off) or a completed circuit (on).

As Dave had done, I cleaned the contacts and placed four new "D" flashlight cells in the metal box to actuate the relay and speaker ... and it worked! You may have seen it at the recent AWA Conference. -- BK

DOING RESEARCH?

Did you ever wonder what happened to Majestic radio, a leading radio manufacturer of the late 20's and early 30's? The following copy was printed in the October, 1934 issue of Radio Retailing magazine.

SALE

PURSUANT to an order of the United States District Court, the Trustee in Bankruptcy of the Grigsby-Grunow Company, Inc., offers for sale all of the machinery, equipment, inventory, good will, patents, trade marks and trade names of the Grigsby-Grunow Company, Inc., as well as real estate and buildings used in the manufacture of MAJESTIC radios, tubes and refrigerators.

The machinery consists of the very finest makes of all types of metal working and wood working machinery, also a completely equipped tube plant, enameling plant and plating plant, all of which are in immediate operating condition.

The inventory consists of made-up parts, parts in process and raw materials for radios, refrigerators and radio tubes. The Service Department on all three items has been kept intact.

The good will consists of the name "MAJESTIC" as applied to radios, refrigerators and tubes, which name has been extensively advertised throughout the world, and which name is secured by copyrights in practically every country in the world. The good will also includes many other names, trade names, patents and copyrights.

The real estate consists of factory buildings which have a floor area of approximately 950,000 square feet, and are suitable for almost any type of manufacturing.

The Trustee is authorized to sell at public or private sale, and is now prepared to receive offers for any part or parcels of the assets, which offer if satisfactory will be approved.

Full opportunity will be given to prospective buyers to inspect the assets. Competent salesmen will be in attendance at the plant, 5801 Dickens Avenue, Chicago, Illinois, at all times, and an early investigation of the property is solicited.

A complete catalog, listing the assets to be sold, has been prepared and will be available to any prospective buyer on request to Mr. Frank M. McKey, Trustee in Bankruptcy, Grigsby-Grunow Company, Inc., 5801 Dickens Avenue, Chicago, Illinois.

(A followup story will tell about the factory and Grunow radio.)

RECOMMENDED BOOKS:

GOLDEN AGE OF RADIO IN THE HOME
by John Stokes ($24.95)
Vestal Press, Jensen Road,
Vestal, New York 13850

RADIO HORN SPEAKER ENCYCLOPEDIA
by Floyd Paul ($13.50)
1545 Raymond Avenue
Glendale, California

RADIO! RADIO!
by Jonathan Hill ($22.45)
Howard Stone, 2825 6th Avenue,
Ft. Worth, Texas 76110

FROM SUPERHETS TO SEWAGE

Alan Douglas

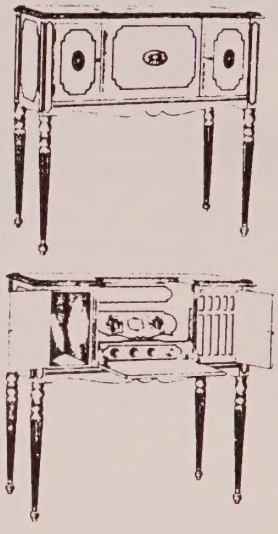
Most 1920s radios look as if they were designed by engineers, and indeed most of them were. So it's not surprising that the cabinet styling for the Radiolas 30, 25, 28, and the 104 loudspeaker was the work of one Edward B. Mallory of Tenafly, New Jersey, and that his design patents were assigned to his employer, Westinghouse. What is a little surprising is Mallory's versatility: he also patented an automatic time-signal broadcast transmitter in 1923, the method of molding the FH horn speaker neck in 1924, and an RF-bridge burglar alarm in 1926.

In 1930 Mallory seems to have left Westinghouse, and turned to designing refrigeration compressors of the type that sat exposed on top of the cabinet (like GE's "*Monitor Top*"). Seven design patents on these were issued in 1930, and some later patents on these were assigned to Climax Engineering Company of Clinton, Iowa. Since his last refrigeration patent, in 1934, went to Lipman Patents Corporation by mesne assignments ("*mean*" – in other words, through an intermediary), it is probable that Climax had failed by then.

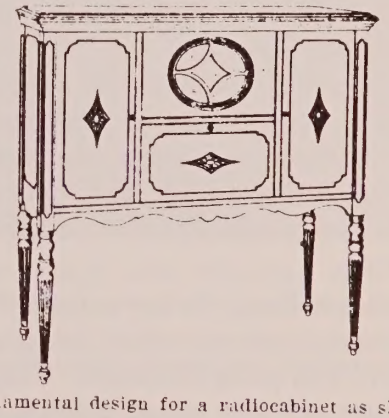
So what did Mallory get involved with now? Sewage treatment! In 1937 he was issued a patent on this, assigned to Lancaster Iron Works, Lancaster, Pennsylvania, and he received all together 13 patents in this field up to 1949.

Can anyone tell me more about this intriguing character, and how he came to design the Radiola Superheterodyne cabinets?

70,285. RADIOCABINET. EDWARD B. MALLORY, Tenafly, N. J., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Mar. 23, 1926. Serial No. 17,027. Term of patent 14 years.



70,286. RADIOCABINET. EDWARD B. MALLORY, Tenafly, N. J., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Mar. 23, 1926. Serial No. 17,029. Term of patent 14 years.



The ornamental design for a radiocabinet as shown.

SAGA OF THE VACUUM TUBE

Again available:

The classic authority on the history of tubes "*SAGA OF THE VACUUM TUBE*" by Gerald F. J. Tyne.

Antique Electronic Supply has contracted with Howard W. Sams & Co., Inc. for a new printing of this book. Available now in soft cover, the price is $15.95. The "*Saga*" contains 494 pages with hundreds of illustrations showing virtually all of the collectable vacuum tubes in this country. Gerry Tyne graduated from Rensselaer Polytechnic Institute and joined the technical staff of Bell Telephone Laboratories. He also became a research associate of the Smithsonian Institution. Bell Labs News of March 1974 said "*Tyne probably knows more about the history of tubes than anyone else in the world*". The "*Saga*" documents and preserves this history and continues to be the primary reference for tube collecting.

For further information call George Fathauer 602-894-9503. Available from:

Antique Electronic Supply
688 W. First Street
Tempe, AZ 85281

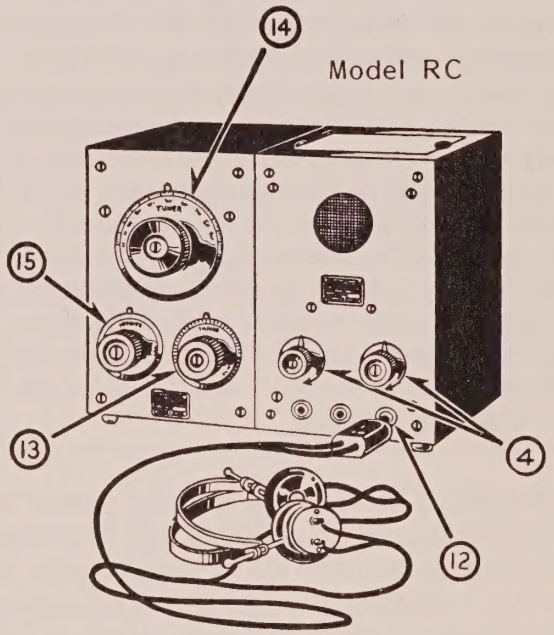
THE BROADCAST RECEIVER

Editors: Dick Ransley, Auburn, N.Y.
Bob Allen, Rochester, N.Y.
(Send all material to AWA, Holcomb, N.Y. 14469)

RELEASE DATES FOR POPULAR RCA RECEIVERS AND SPEAKERS

Actual date may vary slightly. Most early (to 1930) RCA (Radiola) receivers were made by General Electric with some by Westinghouse. Not noted are the very few manufactured by W.S.A.

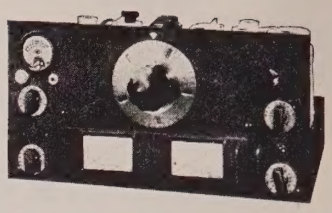
Radiola or Loudspeaker	Date Released	
Regenoflex	April 25	1924
S.H.	March 4	1924
Radiola III	February 2	1924
Radiola III-A	March 27	1924
Radiola X	March 21	1924
Radiola 16	August 8	1927
Radiola 17	September 15	1927
Radiola 18	April 19	1928
Radiola 18 DC	December 18	1928
Radiola 20	November 6	1925
Radiola 24	May 12	1925
Radiola 25	September 10	1925
Radiola 26	June 13	1925
Radiola 28 AC	September 29	1925
Radiola 30	February 15	1925
Radiola 30 A	August 7	1927
Radiola 30 A DC	September 14	1927
Radiola 32	July 27	1927
Radiola 32 DC	September 15	1927
Radiola 33	March 26	1929
Radiola 33 DC	July 29	1929
Radiola 41	December 15	1928
Radiola 41 DC	March 1	1929
Radiola 44	May 29	1929
Radiola 46	May 29	1929
Radiola 50	March 14	1928
Radiola 51	June 13	1928
Radiola 51 DC	December 18	1928
Radiola 60	August 13	1928
Radiola 62	September 14	1928
Radiola 64	October 23	1928
L.S. 100A	May 25	1927
L.S. 103	August 17	1928
Radiola 66	July 18	1929
L.S. 106 A.C.	November 26	1928
L.S. 106 D.C.	April 12	1929
L.S. 100-B	March 26	1929
Radiola 46 DC	November 6	1929
Radiola 67	September 28	1929
Radiola 47	October 7	1929
Radiola 21	October 19	1929
Radiola 22	November 7	1929
AP 1080	March 5	1928
L.S. 105	March 8	1928
AR	January	1923
Grand	March	1922



RC (Westinghouse)	January	1922
RA	October	1924
RS	January	1923
Aeriola Sr.	February	1922
Senior amplifier	September	1922
Special	February	1923
Radiola II	December	1922
Radiola IIII(?)	December	1922
Radiola V	December	1922
Radiola V-A	March	1923
Radiola VI	December	1922
Radiola VII	February	1923
Radiola VII-B	January	1923
Radiola IX	November	1923
Radiola XA	September	1924
Radiola 28 DC	August	1925
L.S. 104 AC	September	1924
L.S. 104 DC	June	1927

The COMMUNICATION RECEIVER

Editor: Bill Fizette, K3ZJW
R.D. 1, Box 55, Henryville, Pennsylvania 18332
All correspondence requires SASE for reply



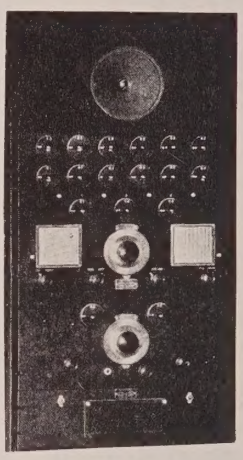
THE NATIONAL AGS-58C AIRPORT COMMUNICATIONS RECEIVER ASSEMBLY

Noteworthy about the National Company products of the 1930s is the seeming stability of product lines ... the well-defined receivers with the familiar and distinctive configurations, such as the SW-3, the FB-7, the HRO, and of course, the AGS. However, each in its turn went through numerous design changes, leading to the variations which are being re-examined and re-documented by historians.

The strange receiver with the two plug-in coils which was often seen in advertisements of the day in company with the AGS is a case in point. This is the National Model 58C, which was a component of the airport communications receiving system designed and manufactured by National for the General Electric Company, under contract to the Civil Aeronautics Board. This column concludes the presentation of the AGS and describes the 58C and its evolution.

According to the first announcement in *QST* (October 1932), the AGS was "developed in conjunction with the Airways Division of the U.S. Department of Commerce to comply with the exceedingly strict requirements of aviation ground-station service." At the same time, the "58C", an updated version of the SW-58, was announced. This early advertisement was obviously directed at the amateur market, since coils were available to cover the entire spectrum from 150 kc to 33 mc. In the same ad, the new power units for either single or paired receivers were announced.

Most of the AGS receivers during their short life span went to the CAA through the General Electric Company, and relatively few with the amateur bandspread coils into the amateur market. In the *AWA REVIEW*, Volume I, Nagle states that the 58C was included to tune the 200-400 mc range not covered by the AGS. The 58C was also advertised as a "*stand-by*" receiver, and since coils from 13½ to 115 meters were supplied, it would appear that this smaller receiver could be used for a number of receiving tasks.

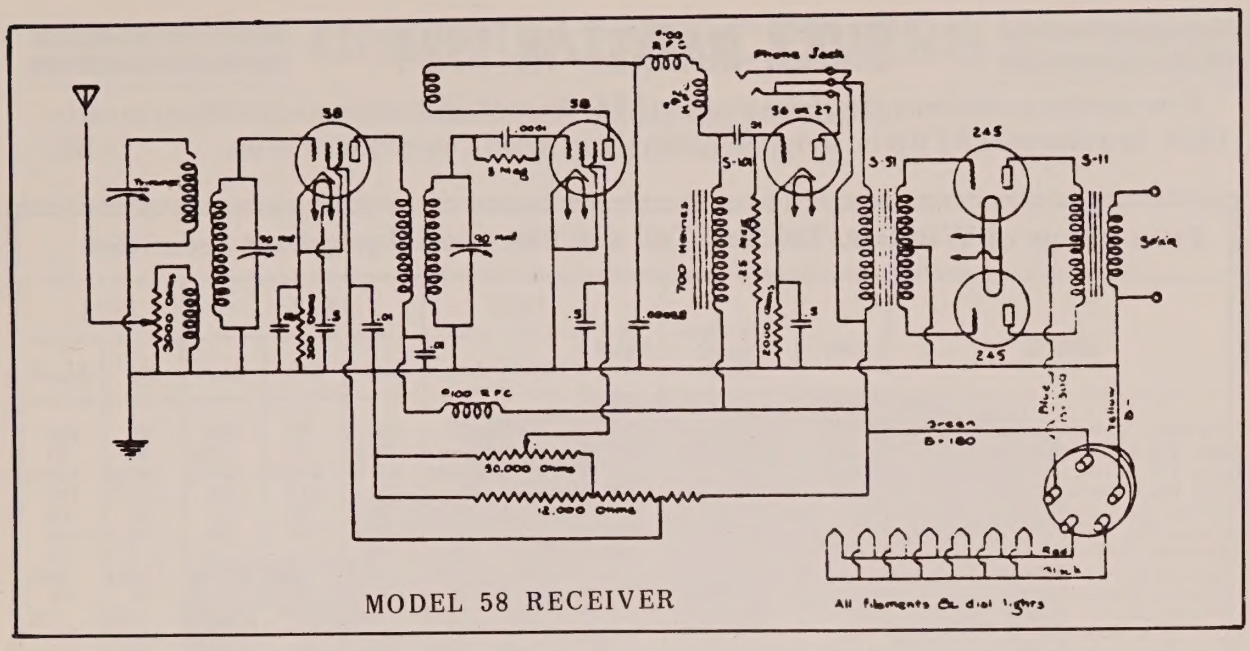


The familiar picture reproduced here is from the National Bulletin 240, and shows the recommended airport installation. Below the heavy duty PM speaker is the storage rack for the AGS coils not in use, then the AGS, with the Type 58C receiver and the dual power supply on the bottom. Note that there is no coil storage rack for the extra 58C coils.

The power supply was available in several variations; the GRSPU for a single receiver, the GRDPU-66 for use with two AGS receivers, and the GRDPU-26 for the AGS/58C combination. The dual units are identified by the two switches.

Collectors and restorers are cautioned to be careful with identifying the differences between the AGS and the 58C coils. The latter are longer and with a smaller diameter, and are not interchangeable (Nagle – *AWA REVIEW*).

The 58C receiver was a reworked SW-58, which in turn was the AC version of the DC re-



MODEL 58 RECEIVER

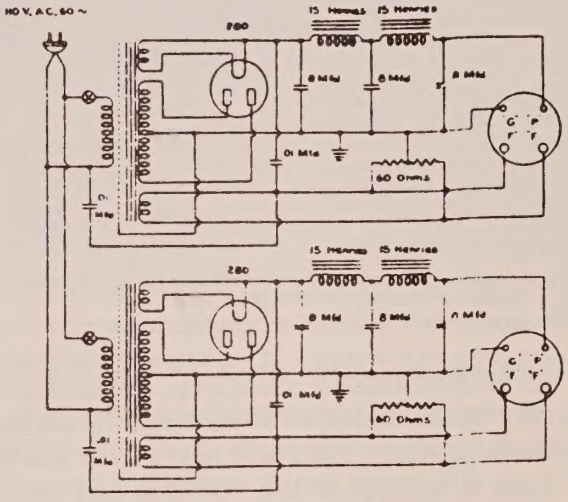
ceiver, the SW-34. An examination of the diagrams and tubes in each leads to the conclusion that the model numbers came from the RF and detector tube types. The circuits of the SW-58 and the 58C were identical, with the coils moved to the front of the panel, since the 58C was designed for rack mounting. (A mahogany box for table mounting was, however, available on special order.) The dial was changed to the Type N to match the AGS.

All three receivers, the DC-34, the SW-58, and the 58C were improved versions of the famous National "*Thrill Boxes*", the most familiar of which was the well known SW-5 short wave tuner. The circuit consisted of a tuner RF stage, a regenerative detector, and two audio stages. The receivers were advertised as sensitive and easily controlled. Shielding, filtering, and circuit isolation were considered important. The shielding feature, by the way, was emphasized in the design and construction of the AGS with its "*triple shielding.*" If you get a chance, examine one carefully.

The 58C was probably the last of the TRF family of receivers produced and sold by National for serious communications work. The day of the manufactured superhet had dawned and National was in the forefront with the AGS, the FB-7, and the soon-to-arrive HRO.

Not all airport installations had the two racked receivers as pictured. One such unit, from the airport of Old Orchard, Maine, which serviced the transAtlantic flyers, included the AGS, a single power supply, the coils and the speaker in a table rack mounting, but no 58C. In fact, it would appear that the classic combination is extremely rare, and this writer has yet to see a 58C receiver. Comments, anyone?

The 4" Type N dial on the AGS, by the way, is the VNE, with a 150-0 scale and a dial rotation of 270 degrees.



The GRDPU dual power supply designed for noise and hum reduction.

When the AGS was first announced, the frequency coverage was 2400 to 15,000 kc, with additional coils to extend the range to 20,000 kc. In February 1933 they announced that the range was now 1500 to 20,000 kc, and bandspread coils were available for the 160 through 20 meter amateur bands. And in March 1933 came the FB-7, which received increasingly heavy promotion in *QST*; by August, 1933 the AGS was relegated to the catalogs.

Two interesting variations of the AGS are pictured in *QST* for July, 1933. The AGU was similar to the AGS electrically, but with the physical modification of having all three coils

(Continued on next page)

STOCK MARKET IN 1924

Few members can remember the market in 1924. Reproduced below are quotations in early 1924. In a future *OTB* I'll print some 1932 copy. You'll find it equally interesting. --BK

Price Range of Wireless, Tel. and Tel. and Electrical Equipment Securities

STOCK	Div.	Authorized Capital Stock	Par Value	1922		1923			1924	
				High	Low	High	Low	Last	Bid	Asked
All Amer. Cables	1½Q	$40,000,000	100	125	107	106	95	100	99	100
Am. Tel. & Cable	1¼Q	14,000,000	100	70	54	58½	40	40¼	40	43
Am. Tel. & Tel.	2¼Q	750,000,000	100	128¼	114½	128¾	119⅛	125⅝	128⅝	128⅞
Bell Tel. Canada	12Q	75,000,000	100	120¼	103	128	112	124	120	125
Cuban Tel. Common	2Q	14,000,000	100	95	80	94	82	90	94	96
Cuban Tel. Preferred	1½Q	2,000,000	100	98	90	99	88	95	85	90
DeForest Radio	50c.SA	2,500,000	10	11	5	12	5	9	5	10
Dubilier Common	.....	160,000	.....	9½	2⅜	13⅝	4¼	10¾	19½	19¼
Dubilier Preferred	1¾Q	500,000	100	.. ..		75	45	55	50	75
Federal Tel. Co.	.....	3,500,000	10	7⅝	5¼	7¼	4¼	5½	6¾	7¼
Gen. Elec. Common	1Q	185,000,000	100	196	136	202¼	167⅝	196½	214¼	215
Gen. Elec. Special	15c.Q	35,000,000	10	10¼	84	12	10¼	10¾	11⅛	11¼
Horne Elec. & Mfg.	.....	*100,000	.. ....	.....	.. ....	.. ..	.....	.....	3	4
Mackay Co. Common	1¾Q	50,000,000	100	117	72	121	105	102	113	116
Mackay Preferred	1Q	50,000,000	100	70	57	70½	64¾	64¼	67	69
Magnavox Mfg. Co.	5c.Q	750,000	1	.. ..		2⅛	90c	2⅛	2½	3
Marconi of America	.....	10,000,000	5	8	4	8¼	5	6½	6	8
Marconi Stamped Stock	.....	.....	.. ....	25c	5c	25c	5c	15c	5c	15c
Marconi of Canada	.....	7,500,000	2½	2½	1	3⅛	1	1½	1	1½
Marconi of England Common	15%	18,000,000	5	15	10	16	9	10½	8	12
Marconi of England Preferred	10%	1,250,000	5	15½	10½	16	8½	10	7½	11½
Marconi of Spain	.....	1,750,000	5	3	1	2	¾	1½	1	3
Marconi Int. Marine	5Q	7,500,000	5	8½	5	10	6	9	6½	9
Mountain States T. & T.	1¾Q	50,000,000	100	110	100	115	105	106	102	105
New England Tel. & Tel.	2Q	100,000,000	100	125	108⅛	122	110	110	111	114
N. Y. Tel. 6½% Preferred	1⅝Q	25,000,000	100	112¾	106	112	107¼	108	110	111
Ohio Bell Tel. Preferred	1¾Q	50,000,000	100	105½	95½	105½	101	103¼	103	105
Pac. Tel. & Tel. Common	.....	18,000,000	100	68	55	95	67	90	95	100
Pac. Tel. & Tel. Preferred	1½Q	82,000,000	100	92	86⅝	94⅛	91½	93	93	96
Radio Corp. Common	.....	*7,500,000	.....	6¼	2⅛	5⅝	2¾	4	4⅛	4⅛
Radio Corp. Preferred	.....	25,000,000	5	3⅞	2	4⅛	2⅞	4⅛	4	4⅛
Western Elec. Preferred	1¾Q	150,000,000	50	113¾	107	117	111⅛	113	113	115
Western Union Tel.	1¾Q	100,000,000	100	116	85	119½	101⅛	107	111	112
Westinghouse E. & M.	1Q	121,000,000	50	65⅜	49⅛	67⅞	52½	60⅜	64	65

* Shares—All others are dollars

The NATIONAL AGS-58C Receiver

in each set mounted on an aluminum plate for ease of handling. For some reason, the dial is a Type B instead of the superior and more expensive Type N. The AGL receiver was a low-frequency modification with a Type B dial and a frequency selector switch instead of plug-in coils.

For those readers who would like to read more about the AGS, the following list may help:

The National AGS "Communications Type" Short Wave Superheterodyne, by James Millen, M.E., The National Company, 1933.

"Designing and Testing a Commercial Short-Wave Super", by Millen and Kruse, Radio News, January and March, 1933.

"The National AGS Receiver", by Bill Orr, CQ, November, 1975.

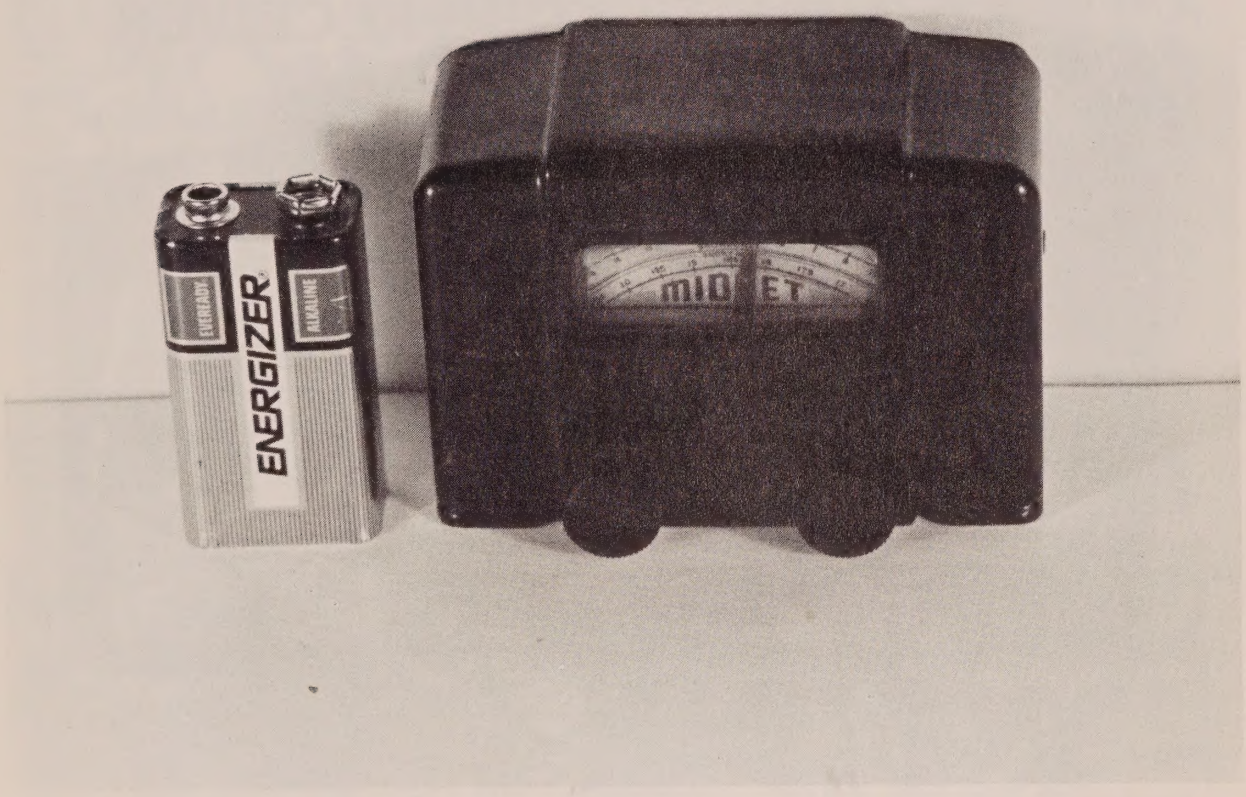
As this column is being written in July, 1987, word has been received of the passing of James Millen, M.E. early in June. Jim, in the few short years he was with the National Company, provided the leadership which was in large part responsible for the large and varied family of receivers so familiar to all collectors and students of the National story. The creativity of his engineering teams is documented in his prolific writings in the trade journals, and they make fascinating reading. A salute to one of the important pioneers in the development of radio communications; his contributions will be remembered.

FEEDBACK: Some errors in the August column have been brought to the editor's attention. In the introduction, the AGS was displaced by newer designs, not "displayed", as printed. Of much more importance, in the 3rd paragraph, column 1, page 16, the modern crystal blank was NOT WWII surplus, and the frequency was 520kc, not 250kc as shown.

K3ZJW

UNUSUAL RECEIVERS

Editor: Dan Boucicault
Madison, Wisconsin



CHEAP MIDGET

The only identification this set has is the word MIDGET printed on the dial paper. The receiver is 3" long - a conventional 9-volt battery at left is a size indicator.

Being curious, I took the set out of the plastic case. It was held with two small nails. This "*wonder*" set consists of a single coil of wire wound on a block of wood, a sliding contact to change inductance and an obscure crystal detector. Holes were punched in the wood (!) with wire contacts for headphones and antenna/ground connections.

It is the ultimate in cheap construction and simplicity. The manufacturer had audacity to print on the paper dial numbers for the broadcast and SHORTWAVE bands! He wasn't deceitful for when the slider was at the low end with 1 or 2 turns you were really on shortwave! Can you imagine a youngster buying this piece of junk for his first BC-SW receiver?

NEW PAVEK RADIO MUSEUM

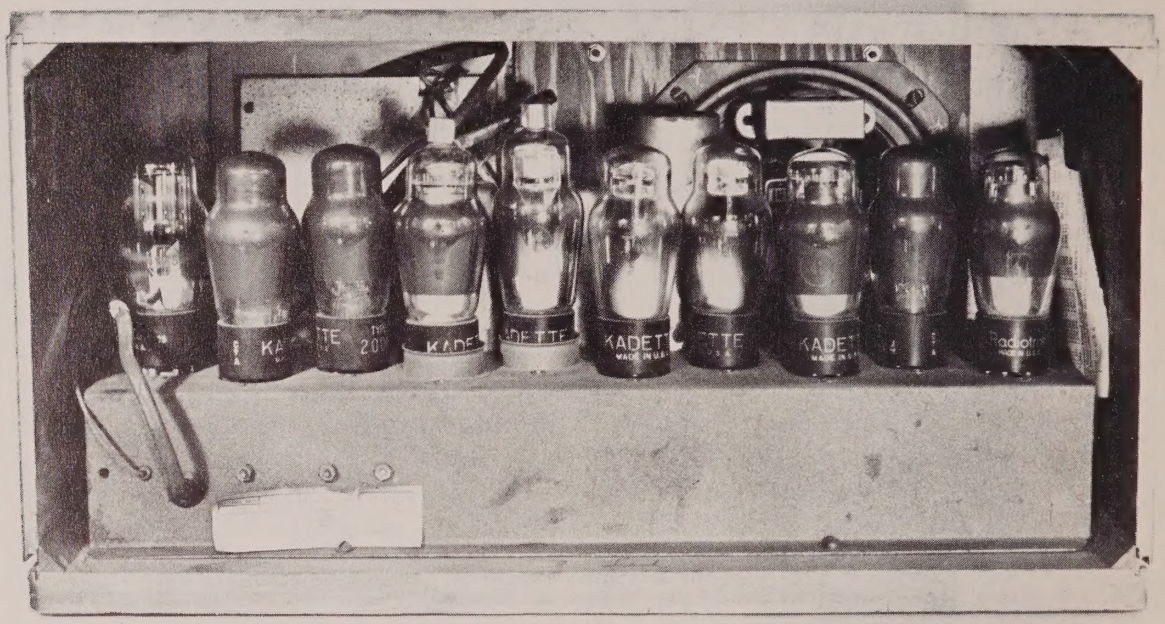
Collectors and historians have been asking about Joe Pavek's museum which was dismantled a year ago. Good news! It is back in operation and has gone public in a new location with a greater display area and several new exhibits.

The new museum is partially funded by the Minnesota Broadcasters Association and the well-known radio and medical historian, Earl Bakken. The Broadcasters Association has offices in the new museum complex with other facilities including a library, broadcast station and studio. A community center will house an early telegraph office, spark, CW, AM and SSB stations.

Numerous activities are in the planning stage. Sounds like a great place to visit. More later, and in the meantime, here is the address:

Pavek Museum of Wonderful Wireless
3515-17 Raleigh Avenue, South
St. Louis Park, Minnesota 55416

THE KADETTE
A 5-TUBE/10 TUBE RECEIVER

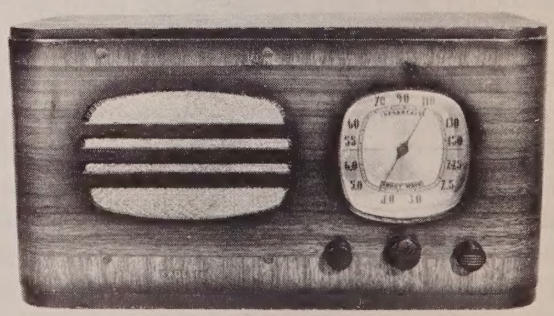


The AWA museum receives dozens of interesting items every year. Usually several table model receivers are included, but they don't create a lot of excitement. One of these sets turned up last year and was about to be placed in storage until Bruce Kelley noticed the 10-tube chassis! He suggested that I check it over and find out why there were so many tubes crammed into an otherwise ordinary-looking radio.

It turns out that the "**KADETTE**" was manufactured by International Radio Corporation in 1937. The model is #1019 and the circuit is a superheterodyne, but a look at the schematic shows *three* ballast tubes. So ok, now we have a 7-tube set. Next we noted that the two type 41 s used in the output stage have grids and plates tied together, so it would be easy to use just one 41 with little loss in output and we're now down to six tubes. By removing the two type 76 triodes and substituting one type 75 for use as a 2nd detector and a.v.c., we have almost the same set and only five tubes.

Apparently the International people had the same idea as they made a model known as the 56X the very same year. The ballast tubes disappeared, the two 76s change to one 75 and the two 41s become one 25B5, a direct-coupled power amplifier. In both cases a 25Z5 rectifier, 6A7 1st detector/oscillator, and a 6D6 IF amplifier were used.

One can only wonder how many customers knew that other than a bit more audio, the model 56X and 1019 were the same. However there probably **was** a price difference!



Ordinary until you turned it around..

"SO YOU THINK YOU HAVE ANTENNA PROBLEMS???"

Return with us to those golden days of yesteryear...

COVER STORY

This picture of days gone by should bring a chuckle, especially if you can relate to it. AWA member Joe Horvath can. He is at right with a pair of tin can headphones (which didn't work) while his friends are making believe they are listening to a homebuilt three tube Harkness reflex receiver. The car: a Model "T" Ford touring - the type with snap-on side curtains.

Joe believes the picture was taken in 1923 at Windsor, California. The receiver was the talk of the town since most listeners were still using crystal and 1-tube sets.

TELECOMMUNICATION

Editor: Don de Neuf, WA1SPM

EL CRISTO LIGHTED BY MARCONI

A mountain peak towers 2500 feet over the city of Rio de Janeiro in Brazil. At its top a huge magnificent statue of Christ, with arms outstretched, looks down at the city. The peak is called Mount Corcovado, and the statue is known as "*El Cristo*". It is flood-lighted at night with powerful arc lamps.

When the statue was completed in 1931, Guglielmo Marconi in Rome, on October 12 participated in an interesting application of radio telegraphy remote control. A wireless signal from a station at Coltano, near Pisa was beamed on Rio and the signal, over a 3500 mile path, was picked up by the Brazilian Wireless Telegraph station outside Rio. From there the signal was fed over a landline to the floodlight control switches at Mt. Corcovado. El Cristo burst into view in the darkness as Marconi pressed the key in Rome during the unveiling ceremony.

Four years later, a powerful AM radio-broadcasting station "*Radio Tupi*", was constructed on the outskirts of Rio. The transmitting antenna area is surrounded by poor huts and rickety shacks. Soon all of them enjoyed modern fluorescent lighting – powered for free through space from the vast radiation of the huge antenna!

In 1974 Brazil issued a postage stamp shown below, commemorating "*El Cristo*" and Marconi.

El Cristo postage stamp...

THE WAY WE SEE IT

Old radio sales and auctions are in the minor league of collectibles. A Cadwalader easy chair sold for $2,750,000. and van Gogh's Sunflower may have brought the tidy sum of $11 million (!) at Christie's London Auction House. Here are some news clippings..read on:

Federal Indictment May Lead To Maximum Penalties

The Cadwalader easy chair, sold at auction at Sotheby Parke-Bernet in New York City, Jan. 31, 1987, for $2,750,000, descended through the family of Gen. John Cadwalader, wealthy Philadelphia merchant, until given to a relative of the individual who sent it in for acution.

Thomas Affleck's bill of sale for the chair is in the collection of the Philadelphia Historical Society. It indicates that the carving was done by James Robinson.

London — One of the most famous and memorable images in all modern art — a depiction of sunflowers by Vincent van Gogh, painted at Arles in January, 1889 — is to be offered in an evening sale of impressionist pictures at Christie's London on March 30. The work will be on view at Christie's New York from March 6 to 8.

It is confidently expected that its sale price will exceed the record $11.08 million (L7.7 million) paid for Manet's "La Rue Mosnier aux Paveurs," sold at Christie's London little more than a month ago. The Manet set

On Jan. 7, 1987, four Philadelphia-area dealers were charged with criminally conspiring to rig prices at an auction. This practice, commonly referred to as "pooling," allegedly violates federal antitrust laws in as much as prices are held down due to mutual agreement of dealers not to bid against one another. Pools generally work in this way: The pool appoints one dealer to bid for the group. The leader then gathers all interested dealers around and often offers money to the weakest potential bidders not to bid. If the pool is successful in buying an item, pool members auction it among themselves. Each dealer writes out a bid and hands it to the leader who also bids. The high bidder gets the item but still must pay off other members of the pool through a complicated formula. Another form of less involved pooling is mutual agreement of dealers to bid or not bid on some items.

According to the indictment against the four dealers, they violated the Sherman Antitrust Act through "unreasonable restraint" of interstate trade in antiques. The charges were filed as felony information,

It has not been announced who brought the complaint that initiated the investigation.

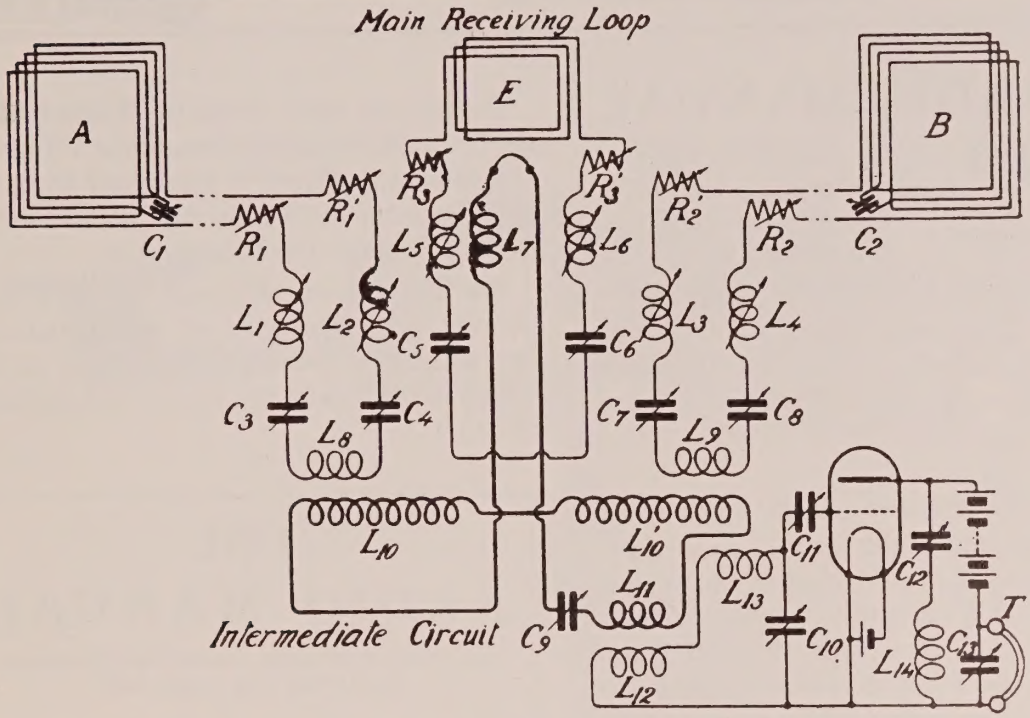


Diagram of Weagant's Triple-loop Receiver for eliminating atmospherics.

The signal current being out of phase in the two loops will therefore cancel out, given proper phase adjustment by means of the resistances and inductances in the loop circuits, so that the resultant current will only be that due to the atmospherics.

If now we take a third receiving loop indicated at E in the diagram and couple this to the receiver in the usual way it will pick up both the signal and the atmospherics. To this loop we may couple the circuits of the two outer loops A and B so that the atmospherics picked up by these loops will cancel out the atmospherics picked up by the main loop E. This coupling is effected by means of the coils L_8 L_9 L_{10} of the intermediate circuit which includes the condenser C_9, the coupling L_5—L_7 to the main loop, and the coupling L_{11}—L_{12} to the receiving valve.

This arrangement possesses the great advantage over the balanced aerial arrangement in that there need be no detuning between the circuits picking up the signal and the circuits picking up the atmospheric, as since the resultant current of the loops A and B contains no component due to the signal the circuits of these loops may evidently be tuned to the signal frequency. This means that the atmospheric impulses derived from loops A and B may have the same frequency and be given the same decrement as the atmospherics picked up by the loop E. These currents therefore can be made to exactly oppose and neutralise one another, leaving only the true signal in the circuits of the detecting valve.

The above schematic was received from British member John Ayers who wanted to know if such a piece of equipment was placed into production, and how well did it perform. Roy Weagant, the author was an American engineer. The information was copied from the June 12, 1920 issue of the British publication *WIRELESS WORLD*. I couldn't give him a definite answer but have doubts as to its success.

This was a time (1920), before short-wave, when most all reception was on longwaves accompanied by horrendous static, particularly during the summer months. Several systems were tried including Roger's underground antenna. Most met with limited success. -- BK

The BOOK COLLECTOR'S CORNER

Editor: James Kreuzer, N2GHD
6270 Clinton Street, Elma, NY 14059
All correspondence require SASE for reply

THE RADIO MANUAL

by George E. Sterling

1st ed. 1st printing Oct. 1928
2nd printing Oct. 1928
3rd printing Dec. 1928

Contains 666 pages, 273 photos and illustrations

Although the title may sound bland, what is contained within the covers is not. The book was written to serve as a guide and textbook for engineers and commercial or amateur radio operators.

The first few chapters outline basic early electrical background and theory. Judging by the date of the first printing, one would expect the book to branch into the AC Radios. On the contrary, no mention is made. Instead, commercial, arc, spark and tube-type transmitters are covered in depth. Photos of the commercial transmitting gear and schematic diagrams are shown, along with explanations of their various circuits.

The section on commercial radio receivers sets the book apart from others. Although printed in 1928, several receivers are pre-1920; the "*Wireless Era*". The following receivers are illustrated and described:

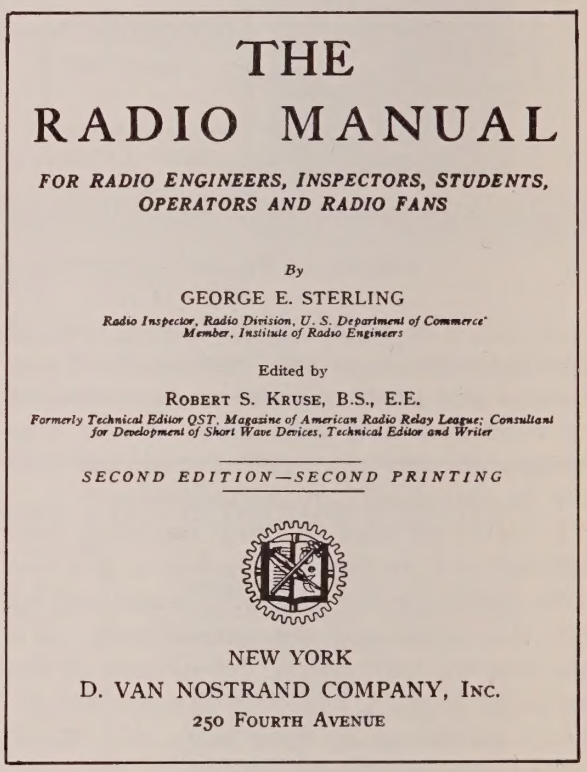
1. **Marconi 106, C & D**
2. **Wireless Specialty 1P501, 1P503 Triode, Type B Amplifier**
3. **Navy Type SE 1420**
4. **Navy Type SE-143**
5. **Navy Type SE-1220**
6. **Marconi Type CM-294**
7. **Western Electric SE-1071 Detector Box**
8. **Western Electric 4-D Receiver and 2A Tuning Unit**

Twenty-eight pages are devoted to an in depth study of radio direction finders and Aircraft Radio Beacons.

Radio amateurs will find a chapter on shortwave equipment and an explanation on how shortwaves are propagated through the different layers of the ionosphere, and the effect of the effect of the time of day upon them. There is even an article about construction of a 40 meter 7½ watt transmitter.

Finally, the book covers the Radio Laws of the United States and International Telegraphic Conference. Given in a complete form, they begin with the 1912 Ship Act, and finish with the then current 1927 Radio Act.

Sterling's *Radio Manual* is a fine book, illustrating the desirable yet rarely obtainable gear of the WWI period. Any collector missing a copy in his library has a gap which should be filled.



THE
RADIO MANUAL

FOR RADIO ENGINEERS, INSPECTORS, STUDENTS, OPERATORS AND RADIO FANS

By
GEORGE E. STERLING
Radio Inspector, Radio Division, U. S. Department of Commerce
Member, Institute of Radio Engineers

Edited by
ROBERT S. KRUSE, B.S., E.E.
Formerly Technical Editor QST, Magazine of American Radio Relay League; Consultant for Development of Short Wave Devices, Technical Editor and Writer

SECOND EDITION—SECOND PRINTING

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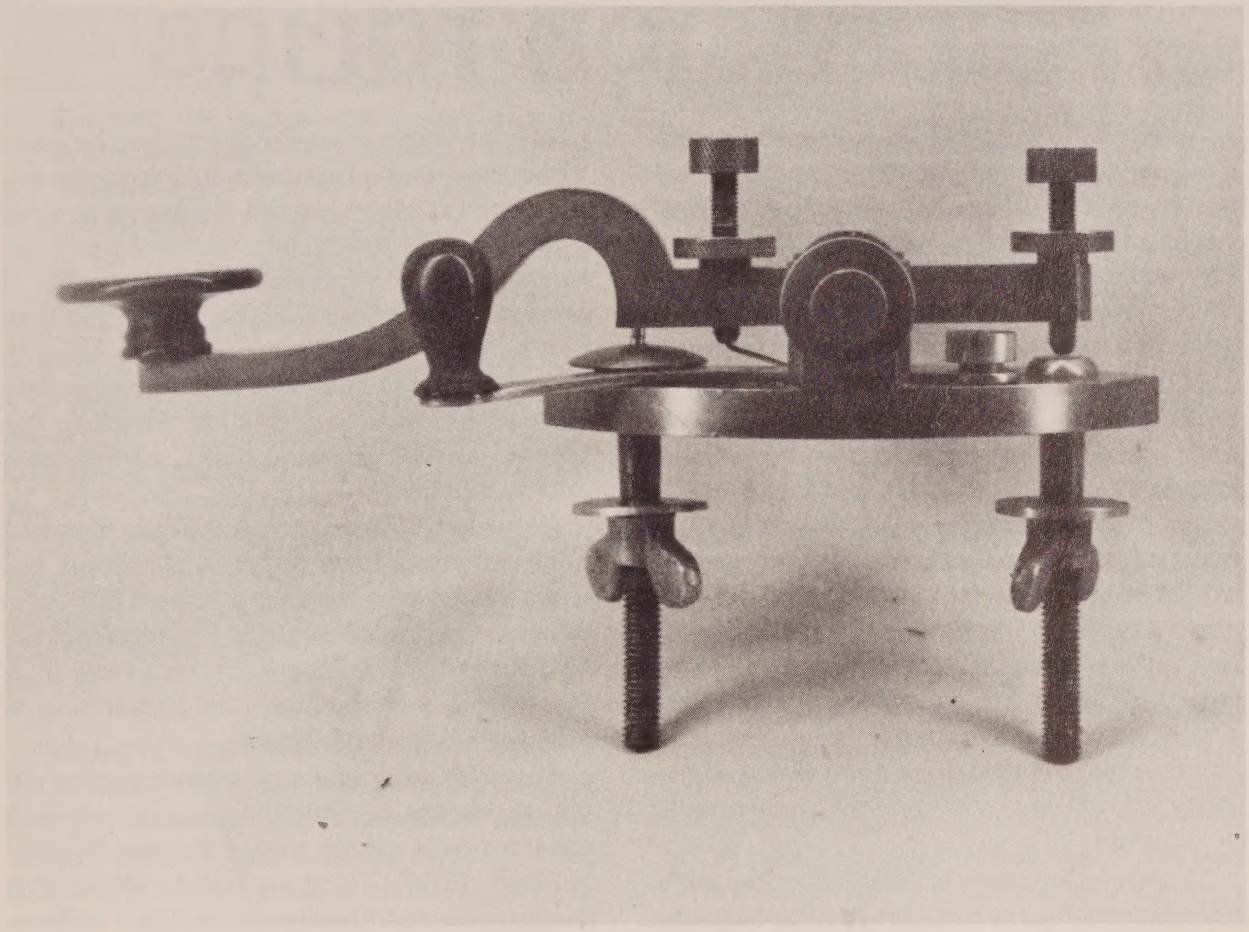
250 FOURTH AVENUE

Ed. note:

On his 94th year, George Sterling, W1AE is surely a grand old man of radio. A charter member of AWA, he was the featured speaker several years ago at an Association Conference in Washington. Having been both a government Radio Inspector and FCC Commissioner, W1AE is highly respected in both amateur and commercial radio circles. A future OTB article will refer to George's Manual.

KEY and TELEGRAPH

Editor: Lou Moreau, W3WRE



Perfection in Camelback design was reached by G.M. Phelps who was the Superintendent of the Western Union Shops in Troy, N.Y. His keys were symbolic of the elegance of the time and were perfect in balance and appearance.
(Key from W3WRE collection)

QUE: *I recently acquired a camelback key marked "W.U. Tel. Co." with "G.M. Phelps Maker" on the lever. Can you give me a date when this key was made? When did they stop having the names on the keys?*

ANS: There should also be an identifying number stamped on the oval frame. This was for reference to the piece of equipment and not a serial number. As to your key: you have have a beautiful G.M. Phelps camelback. Phelps was a master machinist and was the man who introduced the adjustment screw on the lever about 1860 so operators could set the spring to suit their personal touch. This feature was copied by all key manufacturers from 1860 on.

You will find that in the beginning, many of the W.U. machinists did mark their instruments as did Phelps and even earlier with straight lever types with no adjustment features as in the Hennings keys. All the men in the Western Union shops (Troy, N.Y.) were masters of their craft. But later, by the end of the Civil War, this practice of identifying the maker was discontinued. However, they do not have to be W.U. telegraph instruments. A number with the maker, or manufacturer's name also were produced prior to the 1970's.

Remember that the majority of these keys were either leg style for office use or the shorter semi-leg for the KOB units. Your key marks the peak of camelback design. Many copied it but Phelps was perfection. Congratulations.

The TELEVISION RECEIVER

Editor: Jack Davis
63 Midchester Ave., White Plains, NY 10606
All correspondence requires SASE for reply

TELEVISION TOPICS

British Television has been celebrating it s Golden Anniversary this past year and there is much merit to their claim of being the first country to bring television out of the laboratory and into the home. While here in the United States technological developments were on a par with the British, it was not until July 1, 1941 that American commercial television became a reality.

Of course, the main reason that Great Britain was able to offer it s service so much earlier than ours was because it was a government monopoly so that there was central control in making decisions and funding was never a problem. In America, venture capital was oftimes difficult to secure and our free enterprise approach presented a confusing situation to the government regulators who had to make the decisions as to which of the many competing systems would eventually be adopted.

There are those who will argue that the early British entry meant that they had to live with inferior standards for fifteen years before they adopted their present 625 line system. The original system was 405 lines and it was necessary for the government to continue this service for an additional two decades rather than to render the existing 405 line receivers obsolete.

While the Golden Anniversary has been the cause of much national pride, the story behind it is a fascinating one. In 1935 the decision was made to terminate the primitive 30 line mechanical system, based on John Logie Baird's technology, that had been operating since 1931 and institute the world's first high definition television system.

By this time there were two rival systems. One was an optical/mechanical system developed by John Logie Baird who had succeeded in improving his mechanical system so that he was able to produce a 240 line picture. The alternative system was developed by EMI, a company that had been formed in 1930 by the merger of two former gramophone and radio manufacturers. Led by Isaac Shoenberg and a team of brilliant engineers, they had developed an all-electronic system that produced a 405 line interlaced picture. Because the Baird system was sequential, it actually was capable of higher resolution than EMI's. It's drawbacks included it's dependence on having to use film as an intermediate step before scanning and transmitting the picture, as well as being bulky, complicated and immobile.

Common sense dictated that the eventual solution would have to be all-electronic but Baird was an exceptionally stubborn Scot who appealed to English pride by claiming that the EMI system was basically American and RCA was lurking in the background, presumably to take over British television.

To settle the issue, a government committee decided to pit the systems against each other for a six month period starting November 2nd, 1936. There were to be alternating transmissions from studios located at Alexandra Palace, outside of London, and the system selected would remain in use exclusively. The Baird system defects became apparent, outweighing its superiority in showing film which it scanned directly while EMI had to project it first and then use a camera to pick the image – rather like our early kinescopes. In the end, it was the mobility of the electronic system that led to it s adoption. In the words of Cecil Madden, an early BBC producer: "*Working in the Baird Studio was a bit like using Morse code when you knew that next door you could telephone*".

It is interesting to conjecture what would have happened had the Baird system been selected. Would the passage of time have led to improvements that would have overcome it s drawbacks or were they too inherent to ever have been eliminated? The subject is intriguing but my opinion is that the basic problems would never have been satisfactorily resolved.

(Continued on next page.)

My memories of the early American scanning systems remain with me and have been revived by the work of Peter Yanczer. In our last issue, Peter described the mechanical scanning systems he has been building. About two years ago, I acquired a 60 line Nipkow lens disc, circa 1930, which I intend to use to duplicate a receiver described in the March/April issue of *Television News*. Peter is supplying the motor and the eventual receiver should resemble the original, similar to the illustrations.

My main interest is to be able to produce an image on this set. I take pride that all of my pre-war electronic receivers have been restored to operation. Peter's experiments will now make it possible to have my scanners also operational as he has been able to record the signals from his camera scanner on audio tape which I intend to use as a video signal source. A 48 line picture requires about a 20,000 cycle band width, which is obtainable from a good quality reel to reel tape deck. Just imagine the satisfaction of being able to duplicate the results achieved by the early pioneers! Sort of "*Back to the Future*" in reverse.

Advanced experimenters who are interested in doing the same thing should contact Peter who has all of the necessary components for sale. I have available reprints of the *Television News* article referred to which is entitled "*A Simple Lens Disc Projector - How To Build It*". If you write me, I'll be glad to sent you a copy gratis. Building such a receiver will not only be a labor of love – it could also be profitable as these units sell for quite a lot of money and the parts are simple to assemble and inexpensive.

I would like to close by recounting a recent experience incurred while trying to locate a crater tube which is the light source for this receiver. I was told that such a tube could be acquired from the "*gentlemen from Queens*" whose reputation has been common gossip for many years among collectors, particularly regarding the authenticity of early tubes that he has traded or sold.

With this in mind, it was with great trepidation that I purchased a crater tube from him. I asked that the tube be tested but was told that the necessary current source was not available (altho his shop has every conceivable type of apparatus in it) however, he said, the tube was perfect. When I got the tube home – you guessed it – it was NG. A call to the seller with this information brought the response to return it and a refund check would be sent to me.

About a week later, he informed me that the tube was damaged and that I should seek redress from UPS. When I told him that the tube was returned to him because it was a dud and that his assurance to me that he would send me a check kept me from stopping payment on my check to him, his response to me was: "*Why didn't you*?" End of conversation. When I told my tale of woe to Bruce, his answer was: "*You should have known better*". And I should have. Caveat Emptor".

VARIANT

by J. K. Bach

Once, in a pixie mood, I grafted an Edison screw-base onto a 310-A repeater tube and put it in the office tube locker. I thought it looked very funny. Somebody topped me – they put "**Do Not Use**" on the carton in big block letters. It stayed in the locker for years. It served as a conversation piece when we had visitors.

Back in 1925, I saw my first 205-D tube at WSB. The first of the series, the 205-B is well known as the VT-2. The new "D" version had the new Bakelite base, and the bulb was deeply seated so that only the sphere showed. It was flashed in half-moon fashion, and the type number was boldly etched on its equator. The bulb sparkled – all in all, a very handsome specimen. The station operator also was much taken with it – he had taken it out of spares to try in his five-meter amateur rig.

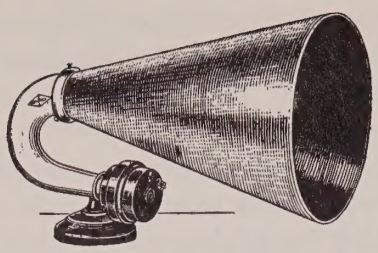
Examining it very closely, I saw a cork in the stem. Not a rubber stopper, a **cork** cork!

I was aghast, didn't Western Electric know that only insulations worthy of the name Victron and Isolantite? I was very young.

Obviously, the cork was intended to separate the lead wires while basing. But I've based a lot of tubes and never found corks necessary or even helpful.

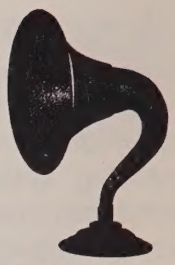
I think now that somebody on the production line had a handful of corks in his pocket. By accident or design, and he too created a rarity in a light-hearted moment.

The VT2 was in heavy production, while relatively few 205-D's were made. If any corked one survived, they must be extremely rare. Maybe too rare for collectors, but I'd like to have one just for the hell of it.



The LOUDSPEAKER

Editor: Floyd Paul, W6THU
1545 Raymond, Glendale, California 91201
All correspondence requires SASE for reply



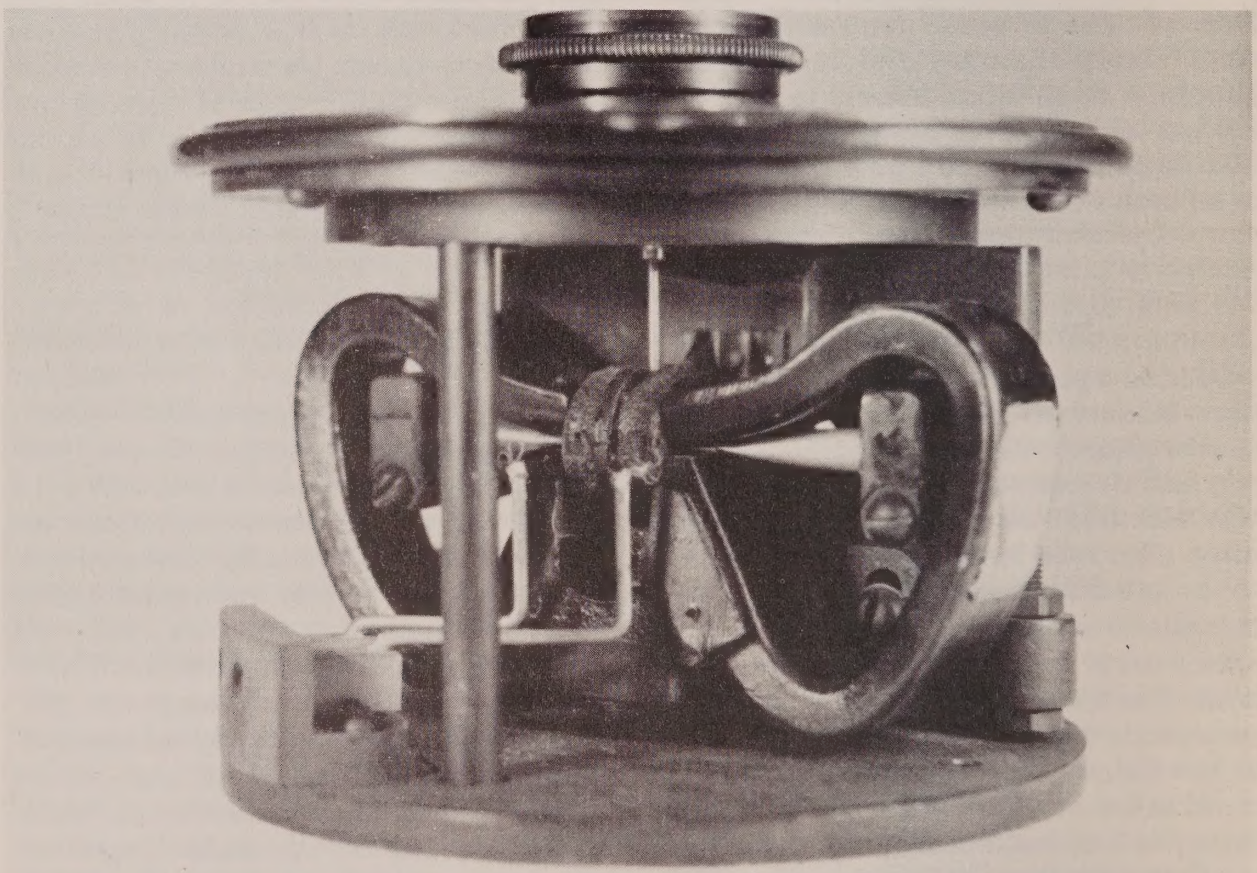
RADIO HORN SPEAKERS THAT RCA DIDN'T MAKE

Collectors are aware of three radio horn speakers that RCA marketed. Model UZ 1320 first appeared in *Electrical Merchandising* in August of 1923 and the UZ 1325 in August of 1924 in *Wireless Age*. Both of these horns were manufacturered by General Electric. The Westinghouse FH first appeared in the *New York Sun* in December 15, 1923. (All dates courtesy of Alan Douglas.) RCA marketed these three horns.

Although RCA was not a manufacturing house in this early time period, RCA was doing development work on horn speakers and conveying the results of their work back to General Electric to help produce a better horn speaker.

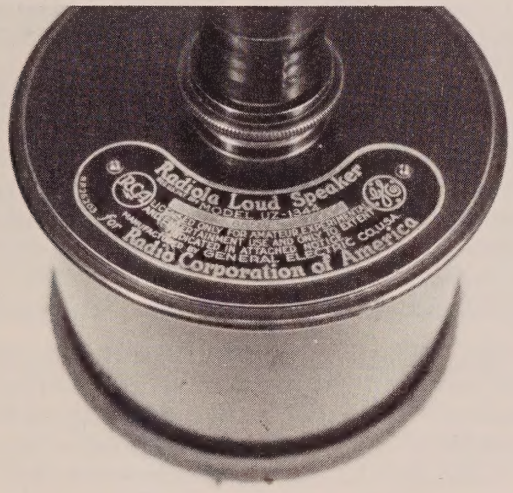
Evidence of this is in the files of George Clark Radioana Collection at the Smithsonian Institution in Washington, D.C. Several letters in that file are: (1) Internal RCA memo suggesting names for the new product line of speakers, yet to be marketed (September 2, 1922), (2) letter between John Minton, consulting research engineer for RCA, to R. Langley of General Electric on RCA development work and (3) a letter from Miller Rubber Company of Akron, Ohio on December 17, 1924 to Mr. Ringel of RCA Laboratories on horns made for RCA to test. (Note: Miller Rubber Company made molded rubber bells for dozens of horn speaker manufacturers, including all horns sold by RCA to the American public.)

At least two horn models, made by General Electric, reached the prototype stage of development but were never marketed. They are



Base of UZ-1344

the UZ 1336 and UZ 1344. Ray Thompson obtained a copy of a UZ 1336 speaker ad from Don Hunter who has an RCA scrap book with such a one page brochure. The brochure is dated April 1923 and the picture shows a base similar to the UZ 1320 base with a lock-nut and adjusting nut arrangement for diaphragm placement. The top bell appears squattier and not as tall as the UZ 1320. The back side of the brochure reads "*Mfd. by General Electric for RCA*". So indeed, there must have been a prototype horn made to support the existence of a printed brochure describing and announcing the UZ 1336. No horn is yet known to exist in the hands of any collector.



Closeup of speaker nameplate

Perhaps, even more startling, is the existence of a UZ 1344 RCA horn. Mr. Larry German, (Rte. 3, Tanganoxie, Kansas 66086) has one in his possession. No brochure or ad is known to exist concerning this horn. It is uniquely different from the driver portion of the UZ Horns that were manufactured. All main non-magnetic parts of the base appear to be brass. (Typical of prototype parts– ease of handling, machining and forming on one of a kind objects but hardly a manufacturing material due to its cost.)

The horn is two thirds the height of the UZ 1320 horn. Larry sent me an excellent sketch of the base design with tolerances, shapes and elements displayed. (Copy available upon receipt of a SASE.) The giant horseshoe magnets and the magnetic armature mechanism is anything but common to the earphone driver mechanisms of the UZ 1320 and UZ 1325 horns.

The hard rubber bell, like all other RCA horn bells, was made by the Miller Rubber Company

The UZ-1344 Horn Speaker

of Akron, Ohio. Larry's pictures show the horn.

Derived from the above information and scenario is self suggestive: The UZ 1320 was the first model version to get to production. After four more versions, UZ 1325 got to production. Ten more versions were experimented with and UZ 1336 got to the brochure stage and probably very close to production and market release. After further and continued horn experimentation, a model UZ 1344 was developed to a full prototype model stage. The next step would have been readying it for advertisement and production release.

Questions: (1) Was a brochure or advertisement ever made on the UZ 1344? (2) Was a prototype of the UZ 1336 ever preserved? (3) Do other prototypes, advertisements or brochures exist?

DID YOU KNOW-----?

that solid copper #10 wire makes excellent soldering tips? Jim Mason of the Northwest Vintage Radio Society became disgusted with the rising cost of replacement tips for his Weller soldering gun and found copper wire works as well as commercial tips.....

HISTORICAL ARTIFACTS

OLD TIME ADS are FREE to members interested in collecting and restoring early radio equipment for personal use.

RULES FOR ADS:

1. Only ONE per issue per member. Send SASE for acknowledgement.
2. Material must be over 25 years old and related to electronic communication.
3. Give full name, address and zip.
4. AWA will not repeat ads. Repeats require another notice.
5. The Association is not responsible for ANY transaction.
6. AWA retains the right to reduce size of ad if over SEVEN (7) lines.
7. AWA does not accept commercial advertising.
8. Deadline for ads:

FEBRUARY issue--DECEMBER 10
MAY issue ------MARCH 10
AUGUST issue----JUNE 10
NOVEMBER issue--SEPTEMBER 10

Ads received after the above dates will be discarded. Mail ALL ads to:

RICHARD RANSLEY
17 SHERIDAN ST.,AUBURN,NY 13021

(Do NOT send ads to Headquarters.)

WANTED

--complete set or chassis for Stromberg-Carlson Mod. 641-A; R & C data for Philco Mod. 65, especially the voltage divider values; any data on Mu-Rad MA-15. Would like a picture of rear of panel and chassis. Ed Allison, 5525 20th Ave., Sacramento, CA 95820

--old QST's before 1928 needed to complete collecion.Also looking for amateur spark equipment. Edward White, 2404 Hedgerow Dr., Wilmington, DE 19810 Tel. (302) 475-3355

--IF gain knob for FB-7, Squires Sanders SS-IR,HRO-60 coils and accessories, National catalogues and literature. Steve Barnes, K6PFW, 848 N, Silverwood, Upland, CA 91786

--operating Manual and/or schematic (copy OK) for Lafayette Model BCR-101, 6 band communications recvr., Stock No. 99-33805. H. J. Morgan, 23 Springwood Drive, Webster, NY 14580

WANTED

--old TV's bought! I have over 315 vintage televisions for sale/trade.Paying $25-500 for pre-1950, 30" B&W, 15/16" color,Predictias, etc. $1000-$6000 for pre WWII TV's. Also Catalin,mirror plexiglass and unusual radios wanted. Harry Poster, Box 1883, South Hackensack NJ 07606 Tel. (201) 794-9606

--Austrian collector looking for any crystal set from 1920-1960. Would like to communicate with other collectors. Erwin Macho Hoffingerg. 12-14/8/18 1120 Vienna, Austria

--documentation for 1933 Collins 32B and 150 watt transmitter with 10A and 3A. Copies or originals of manuals,schematics or recollections would be greatly appreciated. Will defray costs. David Swanson, WB9EIE, 127 Hollister Ave., Rockford, IL 61108

--1st I.F. transformer for Philco 70, cabinet for Philco 90,cabinet for Kadette Jr. F.O.S. page 101,cabinet for Airline 62-606, telephone dial radio F.O.S. pg. 52.Buy or trade over 300 items. Thomas Romano, 31 Granby Rd., Worcester, MA 01600

--Hallicrafters S-29 Sky Travler (military), Midwest Imperial 18 tubes (1935) F.O.S. pg. 185. F. W. Nicholas, P.O.Box 37094, Phoenix, AZ 85069 Tel. (602) 864-9987

--need circuit on a WWII military entertainment radio URR100,battery, AC/DC 120,240V, 3 bands w/octals and loctals. Phil Jaque, 1908 Reuland, Renondo, CA 90278

--Zenith AM table radio, model 6D815 (chassis 6E05, circa 1949), need brown bakelite cabinet for restoration. Dave Zimmermann, 120 Ramblewood Pkwy., Mr. Laurel,NJ 08054 (609) 253-9281

--National receivers. State condition, complete nameplate info and price. David Wilke, W3LSG, 167 Kirch Rd., York, PA 17402 (717) 846-2800 days (717) 741-3953 nights

--seeking Hallicrafters S-35 Panoramic Receiver.Does anyone know the whereabouts of one of these?Finders fee.Also want coils for HRO-50. Sam Thompson, W6HDU, 1031 San Antonio Ave., Alameda, CA 94501 Tel. (415) 521-1429

WANTED

--National Velvet Vernier Type A dial, 3 3/8" dia., 0-100 scale, Nat. Type DX variable condensers 250 and 500 pfd., recvr spacing. Have SW-3 80 meter bandspread coils for sale. Lou Vermond, VE3BDV, P.O.Box 43, Little Brigain, Ont., Canada K0M 2C0

--Riders Vol. 1-5 abridged. Correspond with persons using IBM-PC to catalog old radio collection Joseph Schlosser, 7408 Valley Run Drive, Raleigh, NC 27615 Tel. (919) 847-2955

--schematic/data for Harrison Labs Model 6343A and 6354A power supply and T-3 for SP-600.Ed Lawlor, 5 Pauline St., Carteret, NJ 07008

--Northern Electric decals. or any info as to source. Gordon Wilson, 11108-50 Avenue, Edmonton, Alberta, Canada T6H 0H9

--French Atlantic Telegraph cable equip. and artifacts, especially mirror galvanometer and screen.Also Siamese,double keys. Robert Enemark,W1EC, Box 1607 Duxbury, MA 02331 Tel. (617) 934-5043

--chassis for Crosley Grandfather clock radio, c. 1932. Chassis 10"w x 7"d, has 3 knobs and used type 299 speaker. Does anyone know model number? Bob Goodman, 7943 Ponce Ave.,Canoga Pk, CA 91304

--Atwater Kent speakers Models R and K. Also Models 165, 217 or 708 cathedrals. Joseph Gruber, 763 W. Nebraska Ave., St. Paul, MN 55117

--Sparton-Bluebird radios (1937-40) floor and table models. Mirror and plated metal.Any condition. Ross Young,23 Beverley St., Toronto, Ontario, Canada M5T 1X Tel. (416) 598-2172

--parts for Federal 61-antenna inductance control 0-8,primary condenser control, loop antenna transfer switch, selectivity control,R.F. amplification selector. J. Mason. 90 N.W. 150th Ave., Beaverton, OR 97006

--military radios and related items, earliest up to 1950s.Particularly interested in WWII German,Japanese and Italian equipment.Also any US Gov't publication,TM or SIG with info on "enemy equipment". Hugh Miller,KA7LXY, 6400 Maltby Road,Woodinville,WA 98072

--data wanted on an RCA Brunswick Radiola Model AR 813 w/ Brunswick Balke-Collender phonograph console. Dick Randall, 1263 Lakehurst Rd.,Livermore, CA 94550

--40 meter and 20 meter bandspread coils for National SW-3. John Uscinowski, RR#1 Box 379, Greenwich,NY 12834

--any info on "The Wireless No.12" by Eldred Mfg. Co.,Chicago and Clapp-Eastham marble base Boston Key. Have for trade/sale Fed. D-10, 15" plaster Nipper dog, Meissner S.S. Carl Elkins, AI4P, 1701 Woodland St., Nashville,TN 37206

--telegraph keys and bugs of the unusual types. One-of-a kind or patent models or unusual configurations welcome.Have trades. Gil Schlehman, 335 Indianapolis, Downers Grove, IL 60515

--colorful plastic radios from the 1950's. Any radio or radio/TV advertising with '50s design. Peter Thomashow, 350 West 20th St. Apt. 4F, New York, NY 10011 Tel (212) 989-0213

--early open frame bipolar motors,generators and fans.Also medical devices, galvanometers,scientific instruments. Richard Cane, 8391 N.W. 21 St., Sunrise, FL 33322 (305) 741-6838

--two complete tube shield assemblies for a pre-war HRO (chassis base,shield and top cap) and an 80 meter bandspread coil for same. Dale Martin, W7LOG, 2021 153rd Ave. C.E.,Bellevue,WA 98007

--Remler! Remler! Interested in nearly anything by Remler Co. Will also reimburse set owners for photos of their Remler equipment. Richard Ferranti, 254 Florence St., Arlington, MA 02174

--plug-in coils for National SW3 and manual for same.Also operational manual for Heathkit Impedance Bridge Mod.18-2A Tad Dragoski, 507 Coal Valley Rd., Boro of Jefferson, PA 15025

--would like to hear from anyone with first hand knowledge of design,etc. of '35-'36 top of the line sets made by GE, RCA,Crosley etc. with octal tubes. Ray Larson 12241½ Gorham, W. Los Angeles CA 90049

--tube collector asks for old and unusual tubes. Will buy or trade with German tubes. Udo Radtke, Im Fuchetei 143, D-4830 Gutersloh, W. Germany

--Instruction book for set of 6 78 rpm records called "Marconi Victor Course in Wireless Telegraphy".Will trade audiotape for high quality reprint.Also want Daven amplifier. Bob Lindsay, 901 Ferngrove Drive, Cupertino,CA 95014

--Bell Laboratories Record back copies, and other Bell Labs and Western Electric publications. Bill Schmitt, 750 N. Arm Drive, Mound, MN 55364 (612) 472-3033

WANTED

--Marconiphone VIII cabinet or photo of one. Gordon Wilson, 11108-50 Avenue Edmonton, Alberta, Canada, T6H OH9

--schematic and/or info on Electro Kit #1 one tube radio using 1D8GT supplied be Kean Associates 1946.Also Hickok Electric TV alignment generator Mod.610. John Winans, WA2LGE, 34 Coleman Ave.-W, Chatham, NJ 07928 Tel. (201) 635-3674

--DeForest spherical audion, any condition. Bernard Payne, 116 Palisway Drive S.W., Calgary, Alberta, Canada T2V 3V6 Tel. (403) 281-4341

--Radiola Special 2 tube set by Westinghouse. Will buy or trade Radiola III plus III-A or dicker on others in my collection.Also want Clapp-Eastham RZ or will trade my HZ towards C-E radio. Charles Rhodes, Journey's End Road, South Salem, NY 10590

--DeForest catalogs A & C;Signal Corps P1-A headphones; VT-2's,VT-4's and Marconi-DeForest VT's. George Potter, 2069 Sienna Trail, Lewisville, TX 75067 Tel. (214) 393-0020

--Raytheon 8TP1 transistor radio, OTB Vol. 2-7. Have OTB duplicates to trade or sell. Jerry Talbott, 1440 SW 239th, Hillsboro, OR 97123 (503) 649-6717

--cousins of the National AGS receiver: AGL,AGU,RHP. John Nagle, 12330 Lawyers Rd., Herndon, VA 22071 (703) 620-3066

--630TS television,Aeriola Jr crystal set, Regency TR-1 transistor radio. Carl Baxter, 1133 South Clinton Ave., Rochester, NY 14620 (716) 473-5322

--National NC-57 or NC-33 receiver in clean, unmodified condition.Also want National AGS. Harry MacLean, VE3GRO, 500 Riverside Drive, London, ON N6H 2R7 Canada

--UTC Transformer catalogues pre-1954. UTC LS-49 and Chicago BD-2 30 watt class B transformers. Large size National "Type A" vernier dials. Donald Chester, Route 1, Box 281, Woodlawn, TN 37191

--audio assembly for Atwater Kent Mod. 55.Variable cap. shield plate 5"x14¼". E.M. Fowler, 124 Holly Lane, Morehead City, NC 28557 (919) 726-4445

--meter movement, 7" width, for Precision Model EV-10 VTVM multitester. Reasonably priced please. Bob Smith, 14779 Kogan Drive, Woodbridge,VA 22193

WANTED

--schematic for Oriole Trium Mod. 71 manufactured by the W.K.Electric Co. of Kenosha,WI. Jim Moffett, 218 Shannon Lee Drive, San Antonio,TX 78216

DISPOSE/TRADE

--FBX, SW3, RME69. Will trade for NC100 or NC101. Joel Levine, 38 Bamboo Lane, Hicksville, NY 11801

--Glorytone,Philco,GM cathedrals.Crosley and other tombstones. Over 75 sets on list. SASE. Ed Ripley, Maplewood, MN 55109

--autographed TV books by Jenkins. Matched pair "Radiovision-1925" and "Radiopictures-1929". Both signed to same individual. Good condition.Pertenent pages copied for SAE. Best offer. R. Fabris, 3626 Morrie Dr., San Jose, CA 95127

--Hallicrafter gear: HT-32 $125.,SR-2000 with new finals & DH20 DX Adaptor $750., SR-500 Console, mint with SX-100,HT-30, HT-31.Will trade console for Johnson Kilowatt desk unit.Want PL-172/Eimac 8295, and NCL-2000 Frank Johnson,K6KUS, 6016 E. Lincoln Dr., Scottsdale, AZ 85253 (602) 948-2489

--radio books, magazines, service manuals. Trade tubes and Atwater Kent BB parts. F&E Krantz, 100 Osage Ave., Somerdale, NJ 08083

--complete workshop/laboratory including some radios,tubes,supplies,antique electro/medical apparatus (early 1900's), large collection of gas x-ray tubes and related supplies,high vacuum pumping supplies,glass blowing supplies,books, etc. Sold only as complete workshop. F.R. DeBartolo, Box 1729, Blairsville, GA 30512 Tel. (404) 745-9477

--AK 20C with Model H horn $65.,AK 20 large $55.,Freshman Masterpiece $50., Erla Superflex 3 tube set $60.,AK M horn (mint) $75., Atlas horn $30., Aeriola Sr.(mint) $125.,Aeriola Sr., (excellent) $110, AK 165 $155. Audiophone speaker $20. Want driver for Amplion AR-19 horn speaker. Gary Hill, 1507 Ridge Ave., New Castle, PA 16101

--RCA Radiola V in good condition. All original except for top wooden lid. In working cond. $225.Shipping extra. Phillip Drexler, 1175 E. Ripley Ave., St. Paul, MN 55109 (612) 771-5691

DISPOSE/TRADE

--Hickock charts for Models 532,533, 535,600,605,800 (back to 01A) $6. ea. ppd. ATR vibrator books (identifies 1930 thru 1949 types) $3. ea. ppd, ARC-5 BC sets w/ 24 v. dynamotor $40, w/o dynamotor $30 ea. in average cond. or $10 each in fair cond. Use plug in coils from these to make your 190-550kc set into bc band. Add $7.50 each for shipping. Jim Farago, P.O. Box 65701, St. Paul, MN 55165

--rare Transvue Model 160L "Entertainer", earliest remote control TV, Sentinel Model 400TV, Guild Spice chest radio,excellent Dynakit equip. including stereo 70 amp, FM 3 tuner, PAS 2 preamp. Charles Harper, 2081 Harmony Court, Lexington, KY 40502

--spherical double wing audion w/open filament. Best offer over $100. Herman Fothe, 10 Jackson St., Sloatsburg, NY 10974 (914) 753-2090

--dial plate and all coils from a Scott custom made radio. Smith, 65 Glenwood Road Upper Montclair,NJ 07043

--Zenith "big dial" console, Crosley Ace, DeForest Radiohome, books. Over 100 items. SA2SE. John Kendall, P.O. Box 436, Fallston, MD 21047

--you can build your own Mechanical TV. Information is available from Peter Yanczer. 835 Bricken, St. Louis, MO 63122

--hundreds of radios,TV's and related items for sale. Send SASE to Jim Clark, 1292 Starboard, Okemos,MI 48864

--Thomas Edison Model R2 Lowboy console (chassis Jr) Good working condition. Good cabinet, original speaker. Best offer. Jack Freeman, 1206 Sunnycrest Dr., Reidsville, NC 27320

--large collection of radios, radio-phonograph combos, parts, literature, books, test equip., early amplifiers, record cutting equipment, Kay Sonographs, early tape and wire recorders, tubes.All quality items.Also one of the rarer AK breadboards and parts,microphones. Joe Weber, 604 Centre St., Ashland, PA 17921

--12 issues of OTB 1964-1972 $24; 9 issues of Radio Broadcast 1938-41 $20; 7 early phone plugs & 12 jacks $15; Radiola III (no tubes) $60. F.W.Chapman Apt. B 218, 1130 N. Parker Ave., Lakeland, FL 33805

DISPOSE/TRADE

--48 years of IRE/IEEE,50 years of catalogs like Allied, Lafayette etc. Radio Masters from 1949, General Radio Experimenter, Dumont Oscillographer, GE Ham News, radio parts of 20s-30s. LSASE for list. F.H. Yonker, 7 Old Farm Road, Saddle River. NJ 07458 Tel. (201) 825-1895

--schematics 1920-60 for Radio/TV/PA/ham and misc. Your $3.50 investment returned if I can not supply at least your schematic. Send full description in your first letter. Alton Bowman, RD2, Chapin Vig., Canandaigua, NY 14424

--trade Guild Spice Chest radio, Best 4L, Benwood rotary gap, Bowman & Erco crystal detectors and an oscillation transformer. Jim Collings, 12005 Victoria Pl., Oklahoma City, OK 73120

Award Winners
AT RECENT CONFERENCE

Houck Award JOHN NAGLE, K4KJ
Documentation
Author of numerous historical articles in technical journals including AWA.

Tyne Award DR. RUDIGER WALZ
(Funded by A.W.A.)
Outstanding tube historian and author

Matlack Award JOHN ROLLINS
(Funded by Rex Matlack)
Construction of an early amateur transmitter.

Taylor Television Award ED TAYLOR
(Funded by Jack Davis)
Historian and author of scanning disc type television equipment.

Cundall OT Contest Award
(Cundall Memorial Fund)
FRAN THISSEE, W2BJI -J37XC
High score operation in Grenada.

Thompson "Best of Show"
(Funded by Thompson Award Group.)
FELICIA KREUZER
Outstanding display of Marconi equipment.

Best Exhibit Award:
(Funded by A.W.A.)
DR. MAX DE HENSELER, HB9RS
Rare display of Loewe receiver and tubes.

CONGRATULATIONS!

THE VACUUM TUBE

Editor: Bro. Patrick Dowd, F.S.C., W2GK

THE HISTORY OF THE VACUUM TUBE

VACUUM TUBE DISPLAY PANELS ON EXHIBIT

In the New Reading Room of the Engineering Library at Manhattan College, N.Y.C.
(Each panel is mounted in large wooden case with glass front.)

Panel No.	Description of Panel	# tubes in panel
1	The Birth of the Vacuum Tube – Start of the '*Electronic Age*' Picture of the '*Edison Effect*' Bulb + Samples of Pre-patent DeForest Audion; Fleming Valve; DeForest Sphericals; Weagant Valves; Early Tubulars; Popular WW I Vacuum Tubes – France, England, Germany and America; Early Post-WW I Marconi/DeForest/Moorhead; DeForest '*Singer*' Type Rectifier and Amplifier ('06-'20)	44
2	WESTERN ELECTRIC – Early Spherical Families +VT-1 and Variants ('16-20's) – RCA Tube Releases during the 20's were developed and manufactured by the GENERAL ELECTRIC and WESTINGHOUSE COMPANIES.	56
3	RCA Receiving Tube Releases – (1920 - 1924) + Later Variants.	37
4	RCA Receiving Tube Releases – (1925 - 1929) + Some Forerunners.	42
5	Some of the Many Faces of the 201/201A – Perhaps the most popular vacuum tube ever made. (20's) (Panel No. 1)	56
6	Some more of the Many Faces of the 201/201A – 60 additional Brands and Variants. (Panel No. 2)	60
7	Some Unique, Special and Historical Tubes – WW I/Early 30's	60
8	RCA Receiving Tube Releases (RCA Manufacturing Co.) – (1930 - 1934)	57
9, 10, & 11	Three Panels displaying some of the many contributions of George M. Rose (40 years of R & D for RCA) to Vacuum Tube Technology. (Most of these are first samples.)	128
12	RCA 1 & 2-Digit Receiving Tubes as listed in their 1934 Tube Catalog. (These tubes are typical of most of the receiving tubes manufactured by the various Companies of the period.)	48
13	Multiple representatives samples from the larger Independent Companies. (Receiving Tubes – Late 20's/Mid-30's.)	50
14	Single representative receiving tube samples from 50 of the smaller Independent Companies of the period – (Late 20's/Mid-30's).	50
15	WESTERN ELECTRIC Low & Medium Power Tubes of the '200' Series – 20'/30's.	49
16	WESTERN ELECTRIC Low & Medium Power Tubes of the '300' Series – 30's	52
17	Industrial Tubes – G.E.'s PJ, FG, FP, etc. Series + Westinghouse's 'jumbo'-base Series. (20's & 30's)	44
18	G.E.'s Prototype All-Metal Receiving Tubes + RCA's first production samples of these tubes – 1933 - Mid-'38.	42

19	RCA All-Metal Receiving Tube Family continued. The remainder of the RCA Metal Tube Family + Specials & Variants & the 'Last' Metal Tube manufactured at RCA Harrison Plant – Mid-'38 - Post WW II.	68
20-a	Birth and Development of the Gaseous Rectifier Tubes – Late teens & After.	17
20-b	Birth and Development of the Cold-Cathode Rectifier Tubes – '22 & After.	34
21-a	Vacuum/Ionization Gauges – 20's & After.	10
21-b	Birth and Development of the Electron Ray (Magic-Eye) Tube – '35 & After.	25
21-c	Birth and Development of the Voltage Regulator Tube – WW I &After.	36
22	Early & Popular Rectifier Tubes (Air-Cooled, Low & Medium Power) + *some of the later versions of these tubes – ('16 - 20's & later).*	21
23	Early & Popular Transmitting Tubes (Air-Cooled, Low & Medium Power) + some later versions of these tubes – ('16 - 20's).	21
24	WESTERN ELECTRIC Early 50-Watter Types of Transmitting and Industrial tubes – (20's & 30's).	28
25, 26	Two Panels displaying the RCA '800' Series of Transmitting Tubes (Low & Medium Power only – Larger tubes of this series mounted externally – (Late 20's - thru WW II) + Variants.	63
27	De FOREST, SYLVANIA & HYTRON Transmitting Tubes – (Mid-30's/WW II).	34
28	HEINTZ & KAUFMAN 'Gammatron' Series of Transmitting Tubes – (Mid-30's/WW II) (Low & Medium Power).	23
29	RAYTHEON 'RK' Series of Transmitting Tubes – (Mid-30's/WW II).	28
30	TAYLOR 'T' Series + Other Taylor Transmitting Tubes – (Mid-30's/WW II)	32
31	UNITED ELECTRONICS Industrial & Transmitting Tubes – (Mid-30's & After).	36
32	AMPEREX Industrial & Transmitting Tubes – (Late 30's & After).	30
33	EIMAC Early 'T' Series + Other Eimac Pre-WW II Transmitting Tubes – ('35/'41).	18
34	EIMAC Glass (Air-Cooled, Low & Medium Power) Transmitting Tubes – (WW II & After).	23
35-a	Miscellaneous Low and Medium Power Rectifiers – (30's & 40's). EIMAC - 'R' Series RCA - '800' Series RAYTHEON 'RX' Series & others.	20
35-b	Small Metal/Glass Power Transmitting Tubes – (Late 30's/Early 50's).	23
36	WESTERN ELECTRIC '400'/'700' Series + Specials. (40's & After).	56
37	G.E./RCA Early 'Lighthouse' & 'Pencil' Tube Families – (WW II & After).	63
38	RCA Small Panel made by RCA showing the step-by-step assembly of a 31 'Nuvistor' Triode thru the finished product. (Early 60's).	
39	RCA Small Panel made by RCA showing the step-by-step assembly of a 'Nuvistor' Tetrode thru the finished product. (Early 60's).	43

The next twelve panels trace the birth and development of the 'Electronic TV-Camera Tube' through its main phases from the Iconoscope & Image Dissector to the advent and development of 'Solid-State Imaging Devices'.

40	Early Zworykin Development Iconoscope; Farnsworth Image Dissector with Electrostatic Lens added; Signal Multiplier Iconoscope (Multiple Secondary Emission); Image Iconoscope (Image Multiplier) with Signal Multiplier added.	4
41	The History of the Iconoscope (RCA) (Cont.) – The Development of the Iconoscope from 1938 to 1947. The Birth of the 4½ inch Iconoscope.	9
42	Birth and Early Development of the Orthicon and Image Orthicon – The WW II 'MIMO's' + The Post-WW II Image Orthicons. (1940 thru 1949).	12

(Continued on next page)

43	Birth and Early Development of the Vidicon. The 1st Vidicon – Amorphous Selium Mosaic + Early Sulfide Vidicons + Development of the ½ inch Vidicon + Tri-Color Vidicons & Ruggidized Vidicons. ('51/59).	28
44-a	The Birth and Early Development of the Image Isocon ('45/49) + its Resurrection in the Mid-60's.	6
44-b	Special TV Storage Tubes: Developmental and Product Samples of the Graphechon, Metrechon & Radechon. (50's).	5
45-a	The Monoscope and Early Mosaics ('35 - 40's).	
45-b	Birth of the 4½ inch Image Orthicon ('55) (EEV & RCA)	3
46	Development of the 2 & 3-inch Image Orthicons during the 50's/60's. The Studio 'Work-Horse' of Studio TV until the Mid-60's.	13
47-a	Development of Image Converters & Image Intensifiers + The 'Shutter Tube' for High Speed Photography. (Early 40's/60's)	11
47-b	WESTINGHOUSE's Low-Light Level TV-Camera Tubes. (60's/70's) (For Astronomy & Military Use.)	8
48	Assorted Sulfide Vidicons – The 'Work-Horse' of Home Entertainment & Industrial TV. (50's thru Early 80's)	35
49	The Birth and Development of the 'Lead-Oxide' Vidicon. The Vidicon comes of age – Studio Quality. PHILIPS' Plumbicon, ENGLISH ELECTRIC VALVE's Leddicon and RCA's Vistacon. ('64 & After)	29
50	Assorted Special-Purpose Vidicons + Saticons + Nuvicons + Ultricons + Pevicons. (60's/70's)	38
51	The Arrival of Solid-State TV Scanners and Imaging Devices. Experimental Development and/or Product Samples of all of the Key Developments in this Field from the Early-60's thru '84 – The Arrival of the 1st 'Studio-Quality' Solid-State Imaging Device, RCA's SID504. The Product of Many Companies, both here and abroad are represented.	45
52	RCA - The Complete Nuvistor Tube Family – (60's) + Variations + The 'Last' Nuvistor Tube made at the Harrison Plant.	74
53	EIMAC Metal/Glass & Metal/Ceramic Industrial & Transmitting Tubes Large samples mounted externally. (40's/70's)	50
54	G.E. Planar Construction – Metal/Ceramic Vacuum Tube Family + Lighthouse Types & Mini-Metal/Ceramic Vacuum Tube Families. (50's/70's)	42
55	RCA Metal/Ceramic + Lighthouse Types & other small-size-Metal/Ceramic Tube Families (60's/70's) + Variants.	48
56	Birth & Development of the Modern Miniature Tubes. (1939 & After)	218
57	Birth & Development of the Sub-miniature/Micro Tube. (1939 & After)	157
58	Birth & Development of G.E.'s Compactrons & RCA's Duodecars & Novars. (60's & 70's)	90
59	Popular High-Voltage Recifiers for TV & Industry. (50's/70's)	
60	Development of the Modern Photoelectric Cell. (Mid-20's & After)	60
61	The Birth & Development of the Electron/Photo Multipliers. (Mid-30's & After)	40
62	Birth & Development of the Modern CRT Tube. (Early 20's to WW II)	19
63	Birth & Development of the Projection Kinescope. (RCA - 30's)	19
64	Development of the Klystron (WW II & After) + A number of sectionals.	66
65	More on the Development of the Klystron. (WW II & After). A number of W.E.'s Experimental & Developmental Klystrons.	47
66	U.S. Magnetron Development during the 30's & WW II. Many RCA experimental & Development + Product Samples. G.E. Magnetrons.	36

67	Development of the Cavity-Magnetron. (WW II & After)	24
68	Thyratrons for Industrial & Military Use. (30's & After)	49
69	More Thyratrons + Ignitrons. (30's & After)	25
70	Traveling Wave Tubes (40's & After). Early English Samples + Random American Samples + Backward-Wave Oscillator Samples.	
71	X-Ray Tubes – Assorted Types + Special X-Ray Tube Punctured by Lord Rutherford in 1937.	
72	Samples of various Tube Parts & Tube Assembly Jigs obtained from the RCA Harrison Plant at its closing in June 1976.	
	64 of the larger water-cooled, force air-cooled & air-cooled tubes are mounted externally above the panels. Another 75 or so to be added. Much updating and labeling still remains to be completed.	64
	Total number of different vacuum tubes and related items on display	= 3,028

Editor's note: This is believed to be the world's largest documented collection of vacuum tubes. Visitors are welcomed at the College's Engineering Library (4th floor) during school hours. If time permits, Curator Dowd (W2GK) will give a personal tour. Plan to spend at least two hours. Bro. Patrick Dowd, Tele. (201) 447-2717 Manhattan College, New York City

COLLECTING RADIO MAGAZINES

by Bob Allen, Rochester, NY

The value of pre-war radio magazines was recently covered in "*Antique Radio Classified*". The golden years of radio magazines were 1920 to 1940. Recent magazines have little or no value while pre-WWI issues are scarce. Pictured are popular broadcast magazines of the 20's and 30's. Not shown are amateur publications which are in a different category.

Early magazines featured historical articles, descriptions of broadcast stations, current events and radio personalities as well as pages and pages of ads describing products of the time. These ads in turn provide an excellent benchmark for dating sets and components.

The value of a magazine depends on issue and condition. Volume 1, No. 1 issues are always in demand as are mint copies. As an example, a mint set of bound QSTs has sold for $3000. Early QSTs without torn or missing covers and soiled pages are almost impossible to find. Current issues have little value and are frequently discarded after reading.

Old magazines are an important source of information for the radio collector or historian. They featured broadcast and commercial receiver reviews frequently not covered in other publications. The collector with an off-brand set who cannot find the schematic in Rider's Manual will often locate it in an old magazine.

FRANK C. JONES

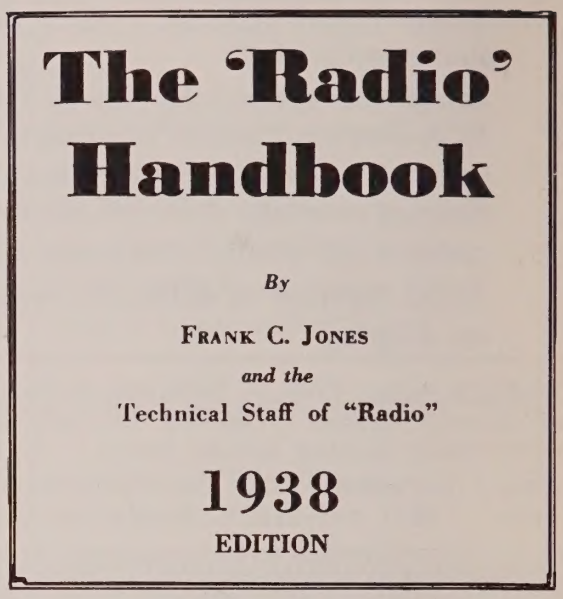
Pioneer radio writer and editor

by Floyd Paul, W8THU

After 50 years, many an old time radio man still feels the best technical magazine ever published for the radio amateur was RADIO which reached its peak of excellence between 1935 and 1940. Paralleling the monthly Radio was the RADIO HANDBOOK.

Both publications were printed on the West coast and edited by a truly down-to-earth practical radio engineer who printed articles that appealed to both the lay person and the advanced amateur. Floyd Paul will tell you about one of the most respected men in the field of radio: Frank Jones, W6AJF.

-- Editor



Frank C. Jones lived in Berkeley during most of his radio career and commuted to several areas in the States for his consulting work. Among the many companies he consulted for were Gilfillan Brothers, Inc., Remler, Echophone, McMurdo Silver, Kemper, Jensen, Rola, Magnavox, and Baldwin. He wrote articles for several publications over a thirty year period.

Frank obtained his amateur license, W6AJF, in 1921. He started writing for the magazine, *Radio,* while in school, and after graduating from the University of California in Berkeley in 1925, he went to work for Pacific Telephone and Telegraph Company as a transmission engineer. He wanted to continue writing articles but found that obtaining a release to publish his articles from the telephone company was very time-consuming (typically six months). Consequently, he adopted several pen names, which included Francis Churchill, Alan Donaldson, and Frank Clement. (Frank's middle name was Churchill, and his son's name was Alan.)

One of his early articles was entitled "An Improved Type of Grid Modulation," printed in *Radio* of March 1924. Jones' articles were typically based upon a tested circuit or an actual piece of equipment he used at his amateur station. His interests and field of knowledge were quite broad. His writings were on all types of modulation, antennas, antenna feed systems, oscillators, transmitters, and of course, receivers from TRF to superheterodynes. He pioneered exploring higher frequencies. In October 1927 *Radio*, Francis Churchill (Frank) wrote about a 5-meter super-regenerative receiver and suggested the ARRL would do a great deal of work developing this band in the coming year.

In 70% of the issues of *Radio* magazine from January 1927 until December 1929, one or more articles by Frank Jones (or an alias) appeared. He was a prolific writer into the '30's and '40's. In this time period as writer, then editor and writer, and finally, part owner of the magazine, *Radio*, he wrote several hundred articles. In several *Radio* magazines of 1935 he had four or more articles published, typically on ultra-short-wave and high frequency receiver and transmitter design.

By 1928 he quit the telephone company, started graduate school at the University of California, and began consulting for radio manufacturers. He was in graduate school some three years. His first radio set manufacturing clients in 1929 were in the Los Angeles area. He did consulting work for Kemper, and then for Gilfillan, in the design of neutrodynes and TRF sets. While at Gilfillan, in 1928 to 1931, he recalls gathering eight to ten engineers of companies doing work under Gilfillan Brothers' roof, and giving them a tutorial session on the superhetrodyne circuit. He remembers that many engineers were sceptical of the design, but within two weeks many were back at Gilfillan starting production of their sets using Frank's circuits.

His work for Magnavox, Rola, and Jensen was oriented towards audio technology and performing acoustical tests on speakers. He helped design a radio receiver for Rola.

Frank feels he may have been the person who introduced two designs per year to the radio industry, and that practice quickly spread around the industry. He recalls the year as about 1930 when he was consulting for Gilfillan. The following year when he did consulting for Echophone in Waukegan, some friends asked him to go to a Radio Manufacturers Association dinner in Chicago. At that dinner he was roasted for having initiated the two designs per year concept.

Frank Jones was instrumental in bringing to market the *Radio Handbook* in 1935. The technical staff of *Radio* magazine were contributors. Frank Jones was a part owner of the Handbooks. The Handbook sold well (see ad). By 1937 the Handbook was named the *Jones Radio Handbook*, (3rd edition). Jones' philosophy and contribution to radio history are expressed by quotations from the preface of the 1937 *Radio Handbook*, "The new Jones Receivers are far in advance of the times, some so simple in design and construction that even an inexperienced layman should have no difficulty in duplicating the performance of the engineer's models ---- The author has given all of his recent time to engineering of equipment that will do a better job for you, at a lower cost. Only that which has withstood the rigid tests in the laboratories, followed by practical tests on the air under actual operating conditions, is found in the pages of this handbook."

In the late 1930's Frank wrote or participated in writing (he also published several) the *Telephony Handbook, Radio Digest, Antenna*

Handbook, 5 Meter Handbook, Radio Interference Handbook and *Cathode* Modulation Handbook, among others. One interesting feature of the early Jones handbooks was the publishing of the electrical schematic diagram of communications receivers. Among early sets, they printed schematics of the Hammarlund Comet Pro, Breting 12, RME 9D, RME 69, Hallicrafter Super Skyrider, and the Patterson PR-10 and PR-12.

He consulted for Echophone (early pioneer of cathedral style radios) in Waukegan, Illinois. In 1931 to 1932, a new company management team took over, shortly before he finished his consulting assignment. They refused to pay him for his services. He threatened them with a law suit. Shortly afterwards he received a notice at his Berkeley address to come down to the railroad station in Oakland. The company had delivered him a freight car load of radios for his services. He remembers some 100 consoles and cathedrals which had been sent to him. It took him months to sell those radios, one at a time, before he finally found a wholesale buyer to take the balance.

Frank Jones collaborated with the staff of *Radio* magazine to help design two sets for McMurdo Silver in 1935. The first was a three tube superhet and was described as a bare bones set. It was called the Jones-Silver Super-Gainer. The second was a model 5D, ten tube superhet, top-of-the-line design and included 1.7 to 33 Mhz coverage, in four switched bands, and two R.F. stages. (See September 1935 issue of *Radio.*) Jones also assisted McMurdo Silver in the design of 25 to 500 watt transmitters.

In Akron, Ohio, during World War II, he visited the Air Force Experimental Labs, and was attending a radar course when he was shown Japanese Air Force radio equipment used in the Zero aircraft. The radio equipment used receiver designs which had been published in *Radio* magazine sometime earlier. He was kiddingly accused of aiding and abetting the enemy.

Frank C. Jones retired from radio consulting work about 1950. He continued writing for several more years. He is now retired, living in Sonoma, California.

February • 1938 **Number 226**

RADIO

The publishers assume no responsibility for statements made herein by contributors and correspondents, nor does publication indicate approval thereof

In this issue "Radio" presents:

ARTICLES

Fixed-Capacity Final—*Charles D. Perrine, Jr., W6CUH* - - - - 9
An Improved Type of Volume Indicator—*Ray L. Dawley, W6DHG* - - - 12
Improved Conversion Exciter—*C. M. Weagant, W7GAE* - - - - - 14
400-Watt HK-54 Amplifier—*Faust R. Gonsett, W6VR* - - - - - 17
The Foolproof Dynapush Exciter—*W. W. Smith, W6BCX* - - - - 19
Matching Stubs with Remote Switching—*B. K. Willoughby, W9NTW-OHK* - 23
Keying with Grid-Controlled Rectifiers - - - - - - - - - 25
The Worm Turns Cold - - - - - - - - - - 28
147-Ft. Steel Mast . . . Only $85—*R. T. Sampson, W6OFU* - - - - 30
An Amateur's Vacuum-Tube Voltmeter—*Lloyd W. Root, W9EHD-W9HA* - 31
Five Bands—Individually Tuned—*G. R. Leach, W8NPJ* - - - - - 35
An Economical Phone and C.W. Transmitter—*Frank C. Jones, W6AJF* - - 40
Razor-Sharp Phone Selectivity - - - - - - - - - - 46
Push-Pull 809's Driven by the "Dynapush"—*B. A. Ontiveros, W6FFF* - - 48
A Ham Band Superhet—*Raymond P. Adams* - - - - - - - 50
Let's Whip the Twenty-Meter Rotary—*E. H. Conklin, W9FM* - - - 56
Band-Switching—Phone and C.W. with RK20's—*Dean S. Young, WLMP, W3FZ* 59

MISCELLANEOUS FEATURES

Frontispiece: *Something Different* 8
Free Wheeling "Q" Spacers - 24
Ionosphere Notes - - - 24
Plate Modulation of Beam Tetrodes 27
Ham Hints - - - - 34
Pictorial: Photograph—*W6NJI* - 63
Buyer's Guide - - - - 96
The Marketplace - - - 97

THE WORLDWIDE TECHNICAL AUTHORITY OF AMATEUR, SHORTWAVE, AND EXPERIMENTAL RADIO

Typical Index page for magazine *RADIO*

I N - H O U S E

NBC now has another owner..first it was RCA, then GE and now NBC is part of the Westwood One conglomerate. Who will be next to own this prestigious network? Maybe a shoe company. Want more? Word comes in that GE also sold RCA Global Communications, Inc. to M.C.I. Communications Corp.! --the foundation of the original RCA in 1920....

Independent car radio dealers are unhappy-- they have every right to be since most new cars come already equipped with a radio leaving the buyer little choice. Word has it that a group of dealers (CASA) plan to do something about it....they may file an anti-trust suit against Chrysler Corp. It is a class action suit under the Sherman Clayton anti-trust act.....

Philips N.V. (Holland) now has complete control of its subsidiary North American Philips Corp. which means they have the last word over pioneer radio American companies Magnavox, Philco and Sylvania. Philips has 350,000 employees in 60 countries!

Are you a radio astronomer? You may be interested in knowing the big VLA in New Mexico is being equipped by NASA with special receiving equipment to pick up Voyager 2's weak radio signals as it flies past Neptune in 1989. The big arrays are not equipped to pickup man-made radio signals..the 27 dishes were designed to receive noise (radiation) from radio stars,pulsars, etc. on four frequencies: 1.3 cm., 2. cm., 6 cm. and 18 cm. Voyager 2 is on 3.7 cm.

The Johnsons of "Radio Restoration" book fame stopped at the Museum this past summer. Betty told me they were writing another book -- which I will review in a future OTB.

Ever receive something in the mail you did not order? Its yours! Federal Law (Section 3009) Title 39 of the U.S. Code prohibits shipment of un-ordered merchandise and constitutes unfair trade practice.A person who receives unordered merchandise may treat it as a gift. He has the right to use it, discard it or dispose of it in any manner he sees fit. He is under no obligation to the sender. The sender may not pester him for payment. If he does, he is in violation of the law. If you should find yourself in this position and there is some question, write to: Bureau of Consumer Protection, Federal Trade Commission, Washington, D.C. 20580

They tell me that fake DeForest spherical audions are back on the market by the same person that pulled the same stunt several years ago. The original endeavors were extremely crude as if they were made by a 15 year old in a local school shop. He sold these fakes to unsuspecting tube collectors at great distances such as New Zealand where the victims had little recourse. The new "fakes" are much better but they say any knowledgeable tube collector can spot one. Look at the internal construction and the leads. Moral: buy only from someone you REALLY know! The fakes are curios and worth only $10.

Lou Nordlinger tells me salvors were seeking a $1.6 billion dollar treasure from the SS Republic which sank near Nantucket in 1909. The disaster marked the first time a distress call was sent by wireless when Jack Binns, the operator, sent a series of CQD's which was instrumental in bringing help. Neither the treasure nor Binns' spark transmitter were recovered....

Mention the name William J. Hammer to a light bulb collector and his eyes will brighten for, as Edison's assistant, he amassed one of the world's largest displays of early light bulbs. Hammer's collection of papers and photographs are now in the Archives Center, Room C-340 National Museum of American History (Smithsonian).

Another book is being written...this time on Major Armstrong..more later.

The Pittsburgh Antique Radio Society had an unusual setting for a recent meeting: Frank Conrad's garage workshop where he pioneered in early broadcasting (KDKA).A highlight was a historical movie film titled" "On the Air" showing Conrad tuning a crystal set!

The VRPS "Reproducer" tells how one of their members was "taken for a ride" by a crook in Great Bend, N.Y. It was strictly a mail fraud deal-- a member of their club sent a check for some merchandise. The check was cashed but no merchandise. A followup letter received no reply. This could have been possibly resolved by the U.S. Postal Authorities since they deal harshly with mail fraud. On this subject, I always questioned dealing with a stranger with a P.O. Box number. A questionable person can easily rent a box, pull a few nasty tricks and disappear. Be sure you KNOW who you're dealing with. Keep me posted if you hear of any crooked deals. I might add that the Consumer Protection Bureau of the State Attorney General's Office has great interest in mail fraud.

Ross Smith, an active photographer, presented AWA several large color pictures of prominent people who had been guest speakers at AWA Conferences. A most thoughtful gift which will be framed and displayed in the Museum.

I worked W2QHH recently on 75. Howie holds the world's record for contacting YL amateur operators. He told me he had qsl cards from 3810 different YL's in 185 countries!

It has happened again..a well known radio pioneer died without leaving a will or instructions as to disposal of his radio artifacts. A general auction was held and the radio material worth thousands of dollars was practically given away. Why are people so naive to think they are going to live forever and never bother to make a will? Have you made yours? - YOUmay be next!

Al Gross, W8PAL recently gave me the "acid test". What was he doing when he burned his lips on the microphone and gently tapped it after each transmission? My answer: "He was using loop modulation."

Good news:a group at Collins (now part of Rockwell) plans to have a small museum in Cedar Rapids with artifacts from Art Collins estate and pieces of Collins equipment. Too bad this could not have also materialized with James Millen and National equipment.

Another new club making great headway is the Northland Antique Radio Club with headquarters in Minneapolis. They celebrated their first big "meet" with a 2-day event Sept. 4 and 5 with many activities including a tour of the new Pavek Museum.

John Terry did an excellent job in compiling the "Tube Value" survey in a recent issue of ARC. As a 50-year tube collector (1937) I found little fault with the dollar values. There were one or two exceptions such as the UV-876 at $6.50 while the common UX-201A was $5.73 I can't but feel the difference should be greater than 79¢ Again, an excellent reference for collectors.

Jim Hardesty stopped by in early September. He's the fellow who demonstrated the huge Tesla coil at the '86 Conference. He told me he now has equipment that will throw lightning sparks up to 15 to 20 feet at a future Conference providing the Sheraton will provide 220 volt power source! I declined his offer (where would we place it?) but accepted a different type but equally spectacular demonstration for our '88 affair.....

George Potter writes that the new National Museum of Communication in Dallas is near completion and should be open by the time you read this.

Remember Hollis Baird who was guest speaker at an AWA Conference many years ago? Bill Hood recently visited the television pioneer at his home near Boston. Hollis was one time Bill's teacher. The AWA Museum has a Baird drum TV receiver circa 1930.

Did you read the newspaper clipping stating Bill Cosby's wife gave him a 1937 "antique radio" for his 50th birthday -- cost: $10,000. Either Bill's wife was "taken" or we've misjudged the AC receiver market!

More theft in the flea market: several have reported lost merchandise displayed in open radio flea markets..and it is just not confined to radio events..it is happening with other collectibles where the seller spreads a large display out on the ground or on tables. Frequently the thieves work in pairs. One will distract the seller while his partner picks up the goodies. Keep your material covered if possible with plastic, don't leave it unattended and report any theft immediately to market chairman. Let's get these crooks in jail! Read "Tricks of the Trade" on page 42, Feb. '87 OTB.

An interesting letter came in the other from a Dr. S.G. Ghandt of the University of Tehran, Iran wanting information on the Museum. I sent him an AWA Museum brochure and gave his exotic envelope to my grandson who collects stamps..guess whose picture is on the stamp.....

73, HW

OLD TIME CW QSO PARTY

A MEMORIAL TO LINC CUNDALL, W2LC

OBJECTIVE: Contact the greatest number of AWA members. When calling use AWA AWA AWA de W2AN, as an example. On contact, exchange year of equipment, such as "TX 36" for a 1936 Xmtr and "RX 34" for a 1934 Rcvr. Send "Mod" for modern 1942 or later equipment.

RULES: A station will be scored only once on each band. Non-member contacts will not count. Stations NOT submitting logs will not count.

FREQUENCIES: 3580-3600 Khz., 7040-7050 Khz., and 14060-14070 Khz. plus or minus QRM. Concentrate 160 meter contacts on the hour. 1800-1820 Khz.

CONTEST DATES AND TIME:
January 13-14 and 16-17. Start at 2300 Z and finish at 2300 Z.
2300 Z = 6:00 PM EST.

SEND ALL LOGS to:
Ken Gardner, W2BGN
42 Oakdale Avenue S.
New Hartford, New York 13413
by March 1st.

SCORING SYSTEM:

NEW RULES FOR CONTEST

QSO ZONES:

"E" Eastern zone:
1,2,3,4,8,9 US districts plus VE-1,2,3

W" Western zone:
5,6,7,Ø districts plus VE4,5,6,7

"DX" zone: Rest of world.

QSO pts. per contact between zones:

"E" zone to "E" zone = 1 pt.
"E" zone to "W" zone = 2 pts.
"E" zone to DX zone = 3 pts.

"W" zone to "W" zone = 1 pt.
"W" zone to "E" zone = 2 pts.
"W" zone to DX zone = 3 pts.

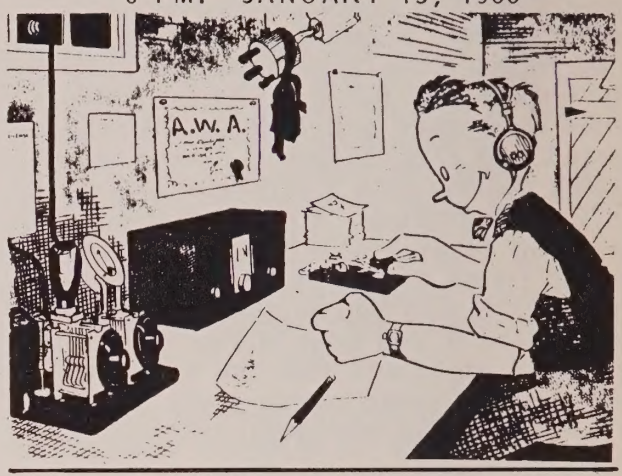
DX zone to E, W or DX zones= 3 pts.

EQUIPMENT POINT MULTIPLIERS

Equipment	Multiplier
TX and RX modern	1
Either OT TX or RX	2
Both OT TX and RX	3

(Transmitter or receiver made in 1941 or earlier is considered "OT". All equipment made after 1941 is Modern (Mod.).

6 PM. JANUARY 13, 1988



POWER MULTIPLIERS (Input to final).
100 watts and up = 2 multiplier
10 to 99 watts = 3 multiplier
Less than 10 watts = 4 multiplier

DETERMINING TOT. PTS. per CONTACT

1. Determine QSO pts./contact.
2. Multiply QSO pts. X your equipment multiplier X your power multiplier = TOT. PTS. per contact.

EXAMPLES:

W2AN contacts W2LV

Both are in "E" zone = 1 pt.
Both have OT TX and RX = 3
Both are running 80 watts = 3

1 pts. x 3 x 3 = 9 pts. for contact.

W2AN contacts W7BCT

W2AN: OT TX and RX with 80 watts
W7BCT: OT RX
Mod TX at 120 watts

W2AN's pts.:
2 pts. x 3 x 3 = 18 pts. for contact
W7BCT's pts:
2 pts. x 2 x 2 = 8 pts. for contact

W2AAU contacts W2AN

Both are in "E" zone = 1 pt.
W2AAU is Mod TX and RX = 1 pt.
W2AAU is running 120 watts = 2 pts.
1 x 1 x 2 = 2 pts. for contact

Log sheets will be mailed to all previous entrants. If you have not participated, write for logs:

Ken Gardner, W2BGN
42 Oakdale Ave. So.
New Hartford, N.Y. 13413

On Review

A new book:

RESTORATION and PRESERVATION of SCIENTIFIC APPARATUS for COLLECTIONS

by Guy BIRAUD whith the participation of J. LEBRETON and R. FOSTER

The author's editorial comment:

For some people restoration is a sin against nature. For others not to restore is a fundamental error. Personally, I take a more subtle view : when fortune smiles and a set comes along in nearly-new condition, all it needs is simple cleaning. Once in a while we're so lucky, but not that often. Let's say 1% of the time for very old pieces and 5% for the more modern things. Thus at least 95% of the time our collectibles need some degree of restoration. Like "British style" whose principal quality is to remain unnoticed, restoration should also remain discreet. No gleaming copper, no finish that looks too new, no brass too brilliant, no bakelite varnished over...

A dual language book (English and French) written by Guy Biraud. Contents are directed toward the collector-restorer who has a small shop and access to various finishes and chemicals. Several restoration examples are given plus an excellent glossary on material and finishes. If you can afford the $35. buy it; you won't regret it.

Small format, 400 pages on glossy paper with illustrations. Price: $35. postpaid.

Order from:

Richard Foster, 12 Shawmut Ave.
Cochituate. Mass. 01778 or
Vestal Press, Box 97, Jensen Rd.
Vestal, N.Y. 13850

ANNOUNCEMENT

THE AWA REVIEW
VOLUME II 1987

Contents:

ATWATER-KENT: Story of the magogany and metal box receivers.

HAMMARLUND: History of the Hammarlund Radio Co. and their products.

TELEGRAPH KEY DEVELOPMENT: From 1844 through WWII with illustrations.

DE FOREST RADIO COMPANIES: History of the 8 radio companies founded by Lee deForest.

ACROSS THE GAP: An authoritive review on the operation of spark transmitters.

THE PHILADELPHIA STORY: 50 years of radio manufacturers and schools in the Philadelphia area.

Volume II has 128 illustrations and more pages than Volume I. Selling at slightly above cost, it is available at only $7. at AWA events or $7. plus $1.50 postage by mail. Make $8.50 check payable to A.W.A. and mail to:

Dexter Deeley, 8 Briar Circle
Rochester, N.Y. 14618

COMMUNICATION RECEIVERS 1932 to 1981

by Raymond Moore

$14.95 plus $2 handling

RSM Communications, Box 218
Norwood, Massachusetts 02062

A brief history of each company is given followed by a description of receivers manufactured. Here is an example of some of the companies listed: Allied, Breting, Cardwell, Collins, Drake, Heath, Hallicrafters, etc.

USED BOOKS --

Interested in purchasing early technical radio books? An excellent source is Jim Kreuzer who has stocked a wide range of hard-to-find publications dating from the late 1800's to the 1920's. Send large SASE to: James Kreuzer, 6270 Clinton Street, Elma, NY 14059.

REFORMING ELECTROLYTIC CAPACITORS

The familiar electrolytic capacitor (condenser) used in filtering power supplies came into general use in broadcast receivers in the early '30s. The exception would be a few sets using the earlier Mershon electrolytic.

The electrical characteristics of electrolytic condensers have a tendency to change over a period of time – particularly if not in use. This lowers the internal resistance. Even new capacitors which have been on the shelf will frequently show low resistance. In addition, a visible change sometimes occurs when some kind of chemical action takes place leaving a powdery crystal residue on the can. These condensers are usually beyond repair.

The set restorer is warned to check the filter condensers in the receiver he is restoring before he turns on the high voltage. A method one can use (but not recommended) is to turn on the receiver and observe the rectifier tube (usually a 280). If the tube shows a distinct blue or starts to show red, turn off the set immediately! If you don't, you'll burn out the rectifier tube or the power transformer. (*Never do this with a solid-state rectifier.*)

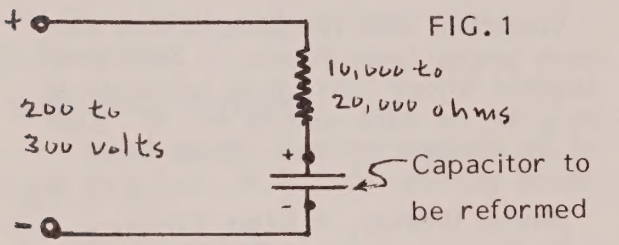


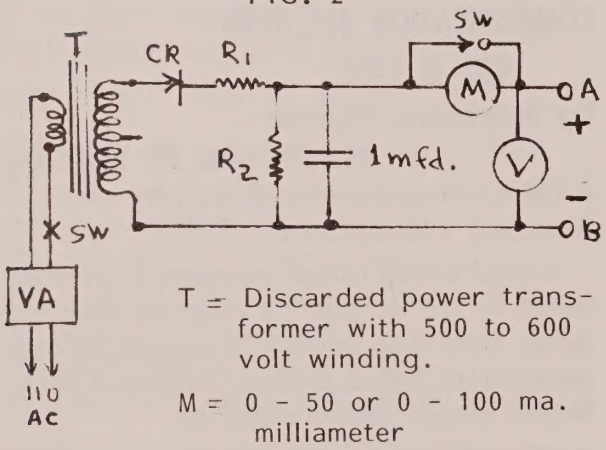
FIG. 1

The preferred method is to disconnect the electrolytic capacitor(s) and check the resistance. An ohmeter will give an initial high reading (*charge*) which should return to almost zero. If not, you need to reform or replace the capacitor.

A capacitor can be reformed (*restored*) by placing it across low DC and slowly raising the voltage to the correct rating. A friend of mine in Nashua (NH) has a quick and easy method to do this. He places a 10,000 or 20,000 ohm resistor in series with the capacitor which he connects across 200 to 300 volts – waits about 30 minutes and hopefully the capacitor is reformed (see Figure 1). As the capacitor reforms, the resistance (and voltage) slowly goes up as the current goes down. Check the results with an ohmmeter.

A much preferred method is one I use where I can observe exactly what is happening (see Figure 2). The values are not critical. Turn the Variac (or Powerstat) to zero, place the capacitor across A and B and turn on the switch. Raise the voltage (Variac) to about 20 volts and open the shorting switch across the milliameter. If the current is less than 10 ma. – you have no problem.

FIG. 2



T = Discarded power transformer with 500 to 600 volt winding.

M = 0 - 50 or 0 - 100 ma. milliameter

V = 0 - 500 voltmeter

R_1 - 2000 ohms R_2 - 20,000 ohms
(Values are not critical)

CR - Diode rectifier

VA - Variac or Powerstat

Slowly raise the voltage keeping the current around 10 ma. or less. In time you should be able to increase the voltage to the correct rating with less than 10 ma. I found some condensers are reformed in one or two minutes while others took 30 minutes. If you can't raise the voltage without excess current, the capacitor (dielectric) is beyond repair.

I have found new 8 mfd. capacitors in original boxes rated at 400 volts DCWV which draw 40 ma. when less than 100 volts is applied. This can be scary! All electrolytics draw some current. Roughly less than 1 ma. for 8 mfd. and under 2 ma. for 16 mfd.

G. Danielson, Cambridge, MA

MODERN ELECTRICS

Members wrote saying they enjoyed reading the old time "Want Ads" published in OTB 27-1-42 (copied from 1914 *Modern Electric* magazine). Here are more to read.

I HAVE FOUR REELS OF MOTION PICTURE film to exchange for a good loose coupler or pair of 2,000 ohm phones. Roy Stine, 582 Broad St., Newark, N. J.

WANTED 1 PAIR OF 2,000 OHM PHONES and a good detector in first-class condition in exchange for 1 pair 75 ohm phones, 1 glass plate condenser, 1 single throw switch, 1 one inch spark coil, all in good condition. John H. Schmeusser, Jr., 155½ Shrewsbury St., Worcester, Mass.

WILL EXCHANGE $15 UNITED WIRELESS type loose coupler with one slide on primary and eleven taps on secondary, wire of both primary and secondary wound on ¼-inch mica cylinders, solid mahogany wood, perfect condition, for Brandes navy or transatlantic receivers. H. Young, 179 4th St., Jersey City, N. J.

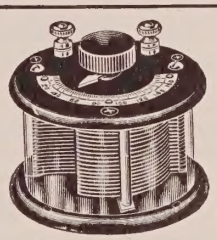
WILL EXCHANGE ONE 110 VOLT, 40 LIGHT, D. C. dynamo, in good condition, worth $50, for Clapp-Eastham or Murdock wireless telegraph instruments; I. K. W. Sending set preferred. C. C. Johnson, Box No. 24, Momence, Ills.

I WOULD LIKE A CLOCKWORK OMNIgraph, Murdock loose coupler and Colt's automatic pistol, or what have you to offer for the following: $8 Massie double control switch, brand new; fine army and navy field glasses with leather case, extended length 8 inches, also 2 inch coil, ammeter, 5 x 7 tent, and $8 ferron detector. Ray Wolf, 1020 5th St., Milwaukee, Wis.

WILL EXCHANGE A FINE RECEIVING OUTfit, consisting of a large loose coupler, mineral detector, E .I. Co.'s fixed condenser, and E. I. Co.'s 1000-ohm amateur phone and headband, for a ½ k. w. transformer. Emerson Gill, Gibsonburg, Ohio.

ELECTRO-PLATING OUTFIT WITH DYNAMO, dip plating outfit; 6-in. single stroke gong; 5 x 4-in. plate camera; 1 lb. No. 30 cotton-covered wire and magic lantern with electric attachment. Want rotary gap, Blitzen transformer, audion or phones. H. Bibber, 1 Lookout St., Gloucester, Mass.

I HAVE THE FOLLOWING TO EXCHANGE for anything in the wireless or electrical line: 1 120 watt, 15 volts, 8 amperes dynamo; 1 Iver Johnson bicycle with Morrow brake and clincher tires, used but two years; 1 Corbin duplex coaster-brake; copper cut for a 600 volt, 100 ampere lightning switch and miscellaneous other articles. Edwin Pearson, 717 East 7th St., Duluth, Minn.



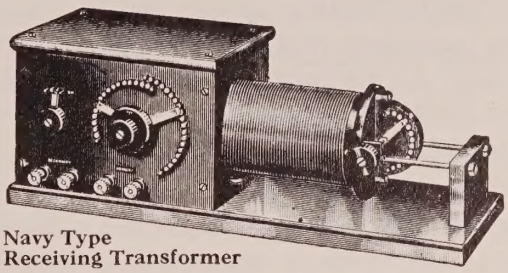
Murdock Variable Condenser

WOULD LIKE TO EXCHANGE THE FOLLOWing for a pair of 2000-ohm "Brandes, Murdock or E. I. Co." telephone receivers: 9 Hubbell pull chain wall receptacles, value about $4.50; 1 lb. No. 34 D. C. C. magnet wire, value about $2.00; 1 telegraph sounder, value about 50 cents. B. Olsen, 736 E. 133d St., New York, N. Y.

WANTED ¼ KW. CLOSED CORE TRANSformer in exchange for 2 silicon detectors with silicon, 1 electrolytic detector, 1 Jr. fixed condenser, 2 double slide electro Jr. tuners, also a large assortment of telephones and parts, magnetos, receivers, transmitters, etc. Ralph Carnahan, 337 E. Church St., Urbana, Ohio.

WILL EXCHANGE A 150-OHM WESTERN Electric Relay and a pair of 2000-ohm "Solid" receivers for a good "rotary spark gap" or a good stationary gap, with some other sending apparatus. Edward Shields, 419 18th St., Brooklyn, N. Y.

WILL EXCHANGE RECEIVING OUTFIT, CONsisting of tuner, loading coil, 2 fixed condensers and silicon detector, for a good loose coupler, value about $8 or $9. Henry Muyskens, Jr., P. O. Box 194, Oak Harbor, Wash.



Navy Type
Receiving Transformer

WILL EXCHANGE A GOOD, STANDARD make receiving transformer for duck type H-1 flexible step-up transformer or Thordarson transformer. L. W. Barhart, 1637 N. 6th St., Harrisburg, Pa.

HAVE ONE MILWAUKEE AUTOMOBILE complete, one small stationary steam engine and boiler mounted, and one low tension magneto to exchange for transformer, storage batteries, phones, large spark coil, rotary spark gap, sending condenser, rotary receiving condensers, aerial switch, high power rifle, fireless cooker, or anything wireless; what have you? The machinery is now at Wichita, Kans. G. E. Spencer, 446 6th St., Portland, Ore.

WANTED—LIGHT TINFOIL NO. 24 AND 30-40 S. C. C. magnet wire, some ¼ inch seasoned oak stock, binding posts, battery switch liners and paints (levers with hard rubber knob), zinc and brass rod; have to exchange a small battery motor, buzzer, knife switch, and two 75 ohm receivers. Robert Brown, 228 79th St., Brooklyn, N. Y.

EIGHT IN. GEISSLER TUBE, SPEEDOMETER buzzer, sheet mica, flashlight, dating stamp, E. I. Co. complete wireless course, lightning arrester, hard rubber bushings, fuse block, D. P. S. T. fused, S. P. D. T. switches in exchange for 2,000 ohm phones with headband, No. 36 insulated wire or other electrical apparatus. Albert J. Weinsz, 327 W. 4th St., Canal Dover, Ohio.

HAVE A 4-IN. WATER MOTOR, 10-V. PONY dynamo, key, spark gap, a 22-cal. Savage repeating rifle which needs new hammer, 2 "Electro Jr." fixed condensers and a double-pole 75-ohm phone; want a folding camera, a reducing transformer and rectifier (not liquid), a loose coupler or a good head set. Roy Dudley, 256 Lincoln Road, Brooklyn, N. Y.

WANTED—A ½ OR ¾ K. W. CLOSED CORE transformer of reliable make or a large variable condenser or a good Ferron detector; I have an 800 meter enameled wire tuning coil, a good circular potentiometer and peroxide of lead detector. Wendell H. Snyder, 3407 Forest Ave., Des Moines, Iowa.

WILL EXCHANGE 1-KW. SENDING CONdenser and helix; also spark gap; for pair of Brandes Superior phones or good loose coupler (not homemade). R. Hazleton, 53 Pryce St., Santa Cruz, Cal.

WILL EXCHANGE 14-INCH DOUBLE-SLIDE tuner, 25-plate variable condenser, ferron detector, 1000-ohm wireless receiver and head band, 6-volt, 60-ampere storage battery, parts of ½-inch spark coil, ½-inch spark gap, ½-pint leyden jar, for a good cabinet receiving set. E. Robinson, 517 West 113th St., New York.

RECENT RADIO and ENTERTAINER OBITUARIES

by Dick Waddell

ABRAM CHASINS (83 yrs.)
Musical director at WQXR,KVSC, etc.

EARL MUNTZ (73 yrs.)
Radio's "Mad Muntz", entrepeneur.

RAY KELL (82 yrs.)
TV pioneer who worked with Zworykin and Alexanderson.

JACK LESCOULIE (75 yrs.)
Founder of NBC's "Today Show" with Dave Garroway.

RICHARD EGAN (65 yrs.)
Movie and television actor.

WILLIAM HALSTEAD (84 yrs.)
Pioneer inventor in stereophonic broadcasting and holder of 80 patents. He was instrumental in bringing TV to Japan and other countries. Halstead was an AWA member and contributor to the OTB.

DR. CHARLES DRAPER (85 yrs.)
Pioneer in advance guidance technology. Prof. of aeronautics at M.I.T.

JOHN HAMMOND (76 yrs.)
Music scout and critic who discovered Billy Holiday, Count Basie,etc.

FRANK POLKINGHAM (89 yrs.)
Research pioneer in early high-frequency radiotelephone equipment at Bell Labs.

GERALDINE PAGE (62 yrs.)
TV Emmy Award winner/stage actress.

HENRY ARGENTO (77 Yrs.)
Former V.P. Raytheon and Philco Corp.

JERRY ROBERTS (71 yrs.)
Announcer for Frank Dailey's "Meadowbrook Ballroom" at Ceder Grove,NJ, etc.

FRED ASTAIRE (88yrs.)
Legendary dancing musical star and TV Emmy Award winner.

JACKIE GLEASON (71 yrs.)
TV star in the "Honeymooners" and other television shows.

JOSEPH MEYER (93 yrs.)
Popular composer including "Crazy Rhythm", "If You Knew Susie", etc.

STAN LOMAX (88 yrs.)
Past president of Radio Broadcasters Assn., WOR, etc.

HAYDEN RORKE (76 yrs.)
Movie and TV actor. Played part of Dr. Bellows in "I Dream of Jeannie".

ARCHIE CAMPBELL (72 yrs.)
Radio/TV star. Starred in "HeeHaw",etc.

LORNE GREENE (72 yrs.)
Former chief newscaster for CBC and was known as "Voice of Canada". In recent years as TV star in "Bonanza".

QUINN MARTIN (65 yrs.)
TV producer of such shows as "The Untouchables", "Barnaby Jones",etc.

SIR WILLIAM HALEY (86 yrs.)
Former Editor-in-Chief of B.B.C.

LOREN KIRKWOOD (77 yrs.)
Former V.P. RCA, holder of 36 patents.

CONRAD THIBAULT (83 yrs.)
Radio vocalist on RCA Victor Showboat.

SILENT KEY

THORN MAYES, W6AX (84 yrs.)

Durango, Colorado

Radio has lost a great historian. Thorn was the author of numerous articles on early wireless and a speaker at several AWA Conferences. His work was thorough and scholarly on original subjects.

W6AX was a retired General Electric executive and in addition to his radio interests, was an avid traveler. He was a leader of the early survey crew that explored Monument Valley, and he helped finance the building of boats Nevills used in the Grand Canyon exploration. His travels took him from the upper Nile to Antarctica, but his first love was radio.

Thorn served on the board of directors of two museums; the Foothill Electronics and the New England Wireless. He was recipient of the AWA Houck Award and was on its committee. ***--BK***

LEE HAGEY COLLECTION

Lee Hagey, one-time engineer with Electro-Voice Corportion was one who enjoyed his work so much he made it his hobby. Over a period of 30 years he gathered a large collection of microphones of all makes. He was also interested in the other end – the loud speaker.

His fine collection of rare and unique cone speakers is now in the AWA Museum. The microphone collection is on hold: how does one display over 100 microphones ranging from WWI carbons to modern broadcast types?

EDITOR'S NOTES

ANTIQUE RADIO CLASSIFIED

ANTIQUE RADIO CLASSIFIED is a publication frequently referred to in the AWA Bulletin. It is a monthly paper with emphasis on Want Ads as well as several columns of interest to the radio collector. A recent series dealt with the value of early equipment and radio tubes. Cost: $18.00 second class or $24.00 first class mailing. A free sample available on request.

A.R.C., P.O. Box 2
Carlisle, Mass. 01741

AWA AT ARRL NATIONAL CONVENTION

Atlanta, Ga., August 7, 8 and 9

AWA has had a booth and presented programs at National Conventions for over 30 years starting with the National in Chicago in the 50's followed by others in New York, Washington and elsewhere.

The latest was the 1987 event in Atlanta expertly handled by Larry Flegle, KC4AXQ and his crew. The group had an impressive panel of speakers. Several AWA attendees from the northeast were quite surprised at the historical interest shown at the convention. Nice job fellows.

The following are actual excerpts cut from the program:

Classic Radio Exhibit Saturday & Sunday all day

0945–1045 **Old Time Radio in the Atlanta Area**.....266

The good old days as seen in rare photos and remembered by W4BIW. **Byron Lindsey W4BIW**, Antique Wireless Assn.

1000–1100 **McMurdo Silver-Innovator/Manufacturer/Purist**.....266

The life and times of this outstanding pioneer in radio. **Gary Flegle**, Antique Wireless Assn.

1100–1200 **Grebe Receivers**.....266

One of the big names in radio during the early years and a favorite collectible. **Don Patterson**, Antique Wireless Assn.

1400–1500 **Integrating Amateur Radio into the Bell South Emergency Preparedness Plan**.....263

The Bell System is evolving an emergency network including amateur radio interface. Hear how amateur radio operators and equipment complement the Bell South high frequency radio emergency network. **Jim Stafford W4QO**

1500–1600 **Contesting with Boat Anchors**.....266

The new-fangled rigs with all the bells and whistles are fine but it may be more fun to use the old boat anchor. Here's how. **Marty Reynolds AA4RM**, Classic Exchange

THE LEAD ACID BATTERY COMES INTO BEING

by D. Kenneth Eneph

One does not often see or hear the name Gaston Planté, but he is credited with a very important invention – the "*accumulator*", or lead-acid battery. Planté, a French professor of physics, developed his battery in 1858, many years before the advent of wireless and the telephone. He immersed two lead coiled plates in a diluted sulphuric acid solution and discovered that when a current was passed through them a deposit of lead oxide appeared on one of the plates (anode).

Upon removing the charging source and connecting the two plates to a closed circuit he noted the current supplied was in the direction opposite to that of the original charging current. But, the cell had a very small capacity.

About the time a growing need for storage batteries was felt with the introduction of filament lamps, a fellow countryman, Faure, in 1881 applied a paste of red lead to the accumulator plates. This greatly increased capacity. At first it was difficult to keep the paste on the lead plates, but Faure overcame this shortcoming by forming them into grids and pressing the paste into the perforations.

One of the largest accumulator systems ever employed was installed by Marconi in 1907 at the Glace Bay – Clifden wireless stations. Some 6,000 cells were connected in series to provide power for the huge transatlantic spark transmitters.

A rather humble beginning for a device which, among a large number of other eventual important uses, did much to save humanity from many broken arms and heart attacks by the elimination of hand-cranking in starting the early automobile engine!

UPDATE: W9POC was listed on p.37, AUG. OTB with a score of 834 points under MOD. This fb score should have been listed on p. 36 since he used both OT RX and RX.-W2BGN

THE MUSEUM

NEW EQUIPMENT in A.W.A. Museum

(sets, parts, magazines, books, etc.)

KB1UV, W2AY, K2LY, W2LL, K2WW, W2FYU, K2ATD, W3VVS, NU4X, N4AUG, W6SAI, VE3JKR, T. Kieffer, F. Stewart, M. Groder, R. Smith, A. Westkirk, J. Vanicek, Bengt Sevensson, Safe Harbor Power Co.

MUSEUM ADMINISTRATION

The departure of the AWA Museum's Business Administrator, Charles Brelsford, to Arizona, has made it necessary to re-organize the Museum personnel. The original accession committee has been increased to five members and henceforth will be known as the **AWA Museum Committee**. Members of this committee are appointed by the President and will work with the Curator, an elected office.

Museum artifacts are held in public trust and must be accessioned and properly displayed or safely stored. This is the responsibility of the curator and committee.

To conform with public museum practice, members of the committee and the curator cannot have a conflict of interest in the museum's operation. In our situation, members of the committee cannot be radio collectors or dealers. The following appointed members meet this criteria:

Charles Bliley, Dick Fish, Art Kelly, Roland St. Louis and **Steve Sykes** with **Sherwood Snyder**, Attorney, acting as legal advisor.

Details of operating the museum smoothly and efficiently as possible are directed by the curator in consultation with the committee and the AWA Board. The AWA treasurer handles financial matters.

A.W.A. HISTORICAL MUSEUM

East Bloomfield, N. Y.
Free Admission

Museum Hours:

May 1st through October 31st
SUNDAY 2 TO 5 PM

June 1st through August 31st
SATURDAY 2 TO 4 PM
WEDNESDAY 7 TO 9 PM

Open to groups by appointment
Tele. (716) 657-7489

Museum Tele. (716) 657-6260

CURATOR Bruce Kelley, W2ICE

COMMITTEE

Charles Bliley, K3NAU
Dick Fish, W2OWF
Arthur Kelly, W2ROB
Roland St. Louis, K2LKH
Steve Sykes, KD2OM

MUSEUM MAINTENANCE and GUIDES*

Dave Atkins
Al Bowman, W2ZUX
Dave Crothers
Paul Feldman
Babs Fuller
Glenn Fuller, N2EXL
Bob Hobday, N2EVG
Russ Maurer
Mani Pires
Doug McManus
Ed Maher, WB2ZJY
Brad Mitchell, WB8YGG
Ron Nelson, KA2GLG
Don Ray, WA2PKS
M. Rosenfeld, KA2JAJ
Bill Shaw, W2HYN
Tony Prasil

(**Officers and Directors also act as Museum guides.*)

AMATEUR OPERATION

W2AN: Geo. Batterson and B. Kelley

MUSEUM ACTIVITY

The small AWA Museum continues to be an attraction to specialized organizations. Two groups who visited the Museum recently were the local chapter of the Society of Motion Picture and Television Engineers (SMPTE) and the New Jersey Chapter of the Antique Auto Club of America. On these occasions, the Museum is opened with special guides.